APPENDIX 14. STANDARDIZED EVALUATION CRITERIA FOR PRODUCTION APPROVAL HOLDERS, ASSOCIATE FACILITIES, AND SATELLITE MMF'S

1. **PURPOSE**. This appendix provides standardized evaluation criteria used in documenting the evaluation of the system elements listed in figure 1 for production approval holders and associate facilities, including their satellite MMF's.

FIGURE 1. SYSTEM ELEMENTS

FIGURE 2. ACSEP DATABASE CODES

	Code
Management	M
Engineering	E
Manufacturing	P
Quality	Q
Service/Product Support	S
Communication with FAA	C

2. **DESCRIPTION OF SYSTEM ELEMENTS SECTION FORMAT**. Each section of this appendix addresses one of the 17 system elements listed in figure 1. Each section is formatted as follows:

APPENDIX 14. STANDARDIZED EVALUATION CRITERIA FOR PRODUCTION APPROVAL HOLDERS, ASSOCIATE FACILITIES, AND SATELLITE MMF'S

a. **System Element Description**. This is a brief description of what the system element is intended to accomplish or control.

b. **System Element Standardized Evaluation Criteria**. Each criteria is formatted as follows:

(1) **Standardized Evaluation Criteria**. Each criteria is identified by a numbered question within a box. The format of each question number is based on the specific system element section number identified in figure 1, the ACSEP database code identified in figure 2, and the sequence within the database code. For example, question 1E2 would be the second question [2] identified by the engineering ACSEP database code [E] under the organization and responsibility system element [1].

NOTE: The ACSEP database code is used by AIR-200 as a tool for data analysis only.

(2) **Applicability**. This identifies whether the criteria applies to a specific type of production approval (APIS, PC, PMA, and TSO authorization). A table format is used that identifies the type of facility across the top, and a code for the type of applicability in the first column. The codes for the types of applicability are defined as follows:

(a) **R**. This applicability code is used to identify criteria that reflect applicable CFR requirements. The applicability to a specific facility is indicated by the specific CFR part or section reference; e.g., § 21.143.

NOTE: The evaluator must determine the actual applicability of the CFR referenced, based on the encountered condition. For example, § 21.125(a)(2) requires an APIS holder to maintain material review board records for 2 years. However, it does not require the APIS holder to have written procedures on how the records will be maintained.

(b) **P**. This applicability code is used to identify criteria that reflect many of the industry practices and total quality management principles established to assist in meeting applicable CFR requirements. These practices and principles are often contained in FAA-approved data or other facility procedures. The evaluator must determine the actual level of application at each facility. The applicability to a specific facility is indicated with an "X."

(c) **N**. This applicability code is used to indicate that the criteria is not generally applicable at a specific facility. The evaluator must determine the actual level of application at each facility. The applicability to a specific facility is indicated with an "X."

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NOTE: Applicability indicated for a specific type of production approval includes any associate facilities or satellite MMFs established under that approval.

(3) **Statement of Condition**. The statement of condition provides specific indicators of criteria that have been satisfactorily implemented. These indicators may include documented procedures and adherence to those procedures. The procedures indicated in the statement of condition include some of the specific practices and principles that are often associated with the criteria. However, these practices and principles are not the only acceptable indicators of satisfactory implementation. Evaluators may identify additional practices and principles in FAA-approved data or other facility procedures. A practice or principle that reflects applicable CFR requirements is generally followed by the specific CFR part or section reference in brackets, e.g., {§ 21.143}. The statement of condition assists the evaluator to determine the following:

(a) The depth of the evaluation that may be required to satisfactorily evaluate the procedures, requirements, and products related to the criteria.

(b) The appropriate criteria on which to document evaluation results.

SECTION 1. ORGANIZATION AND RESPONSIBILITY

1. **SYSTEM ELEMENT DESCRIPTION**. The evaluated facility's design control and production management relating to a production approval.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document the evaluation of this system element.

1M1. Is there an overall policy document to describe the management of production functions, including a description of responsibilities and authorities?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. The policy document includes:

(1) A current description of each functional organization in the production management system.

(2) A policy statement establishing the responsibilities and authorities of each of the functional organizations.

b. There is objective evidence of observance to established policy.

1M2. Are the organizations responsible for performing production management system functions described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

1M2 (continued)

Statement of Condition

a. The policy document includes, as a minimum:

(1) A current table of organization that describes the functional relationship of upper management to the various organizational components.

(2) The current purpose and objectives of the evaluated facility, and, as applicable, its function in relation to a PAH having multiple facilities.

(3) The use and functions of FAA designees within the facility.

(4) The role of FAA designees in the facility and their responsibilities as representatives of the Administrator, ensuring that no conflicting restraints are placed on the performance of their duties.

b. There is objective evidence of observance to established policy.

1M3. Is there a staff of engineering, flight test, production, and inspection personnel, as appropriate, to determine compliance to airworthiness requirements?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. There is objective evidence of a staff of engineering, flight test, production, and inspection personnel, as appropriate, to determine compliance to airworthiness requirements.

1M4. Have facility personnel performing as FAA designees been placed in an organizational position with sufficient authority to enable them to administer the pertinent CFR effectively?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

1M4 (continued)

Statement of Condition

a. Designees are in an organizational position with sufficient authority to enable them to administer the pertinent CFR effectively.

b. Designees are actively involved in production processes and quality activities defined by the evaluated facility in order to administer the pertinent CFR effectively.

1M5. Is the policy document reviewed periodically by the evaluated facility for adequacy and currency, and updated as warranted?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. The policy document provides for periodic review and update, when required.

b. There is objective evidence of observance to established procedures.

1M6. Are there provisions to make policies and procedures available to responsible personnel?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. The policy document provides for controlled distribution of policy and procedures.

b. There is objective evidence of observance to established policy.

1M7. Do the TC, PC, PMA, TSO authorization, and PLR documents accurately list all the products for which the evaluated facility holds approval?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. There is objective evidence that each type certificate TC, PC, PMA, TSO authorization, and production limitation record (PLR) has been updated to the current status.

1E1. Are the organizations responsible for performing engineering, and flight test functions when applicable, described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table of organization that describes the functional relationship of the various organizational components.

(2) The current purpose and objectives of the engineering organization.

b. There is objective evidence of observance to established procedures.

1E2. Is an individual identified for managing the engineering program? Does that person have the necessary authority?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table or organization chart that describes the chain of authority and responsibilities within the engineering organization.

(2) A list of the authority and responsibility of those who are authorized to make changes to the engineering system.

b. There is objective evidence of observance to established procedures.

1P1. Are the organizations responsible for performing manufacturing-related functions described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table or organization chart that describes the functional relationship of the manufacturing organization to management and to the other organizational components.

(2) The current purpose and objectives of the manufacturing organization.

b. There is objective evidence of observance to established procedures.

1P2. Is an individual identified for managing the manufacturing program? Does that person have the necessary authority?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table or organization chart that describes the chain of authority and responsibilities within the manufacturing organization.

(2) A list of the authority and responsibility of those who are authorized to make changes to the manufacturing system.

b. There is objective evidence of observance to established procedures.

1P3. Is there a requirement for the evaluated facility's manufacturing personnel to have training and skills appropriate to their assignments?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures define the method for establishing and maintaining personnel qualifications appropriate to the various manufacturing functions performed.

b. There is objective evidence of observance to established procedures.

1Q1. Are the organizations responsible for performing quality-related functions described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.165		§ 21.607
P	X		X	
N				

Statement of Condition

a. There is objective evidence that everyone in the PC or TSO authorization facility associated with the quality system is performing within their described assigned responsibilities and delegated authority. {§ 21.165; § 21.607}

b. For all other evaluated facilities, there is objective evidence of:

(1) A description of the assigned responsibilities and delegated authority of everyone in the evaluated facility's organization associated with the quality system, and in particular the quality organization.

(2) A table or organization chart that describes the functional relationship of the quality organization to management and to the other organizational components.

(3) The purpose and objectives of the quality organization.

1Q2. Is an individual identified for managing the quality program? Does that person have the necessary authority and organizational freedom?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.165		§ 21.607
P	X		X	
N				

Statement of Condition

a. There is objective evidence that the chain of authority and responsibilities within the PC or TSO authorization quality organization is performing as described. {§§ 21.165; 21.607}

1Q2 (continued)

b. For all other evaluated facilities, there is objective evidence of:

(1) A current table or organization chart that describes the chain of authority and responsibilities within the quality organization.

(2) A list of the authority and responsibility of those who are authorized to make changes to the quality system.

1Q3. Is there a requirement for the evaluated facility's quality personnel to have training and skills appropriate to their assignments?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures define the method for establishing and maintaining personnel qualifications appropriate to the various processes, tests, and inspection functions performed.

b. There is objective evidence of observance to established procedures.

1Q4. Does the evaluated facility have and use a Quality Manual to describe the management of quality-related subjects, including a description of responsibilities and authorities?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.123	§ 21.165		§ 21.607
P			X	
N				

Statement of Condition

a. There is objective evidence that the quality manual is available in the major quality and inspection areas, and is subject to periodic review and revision.

1Q5. Are tags, forms, and other documents described and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A sample of each tag, form, and other document with instructions for use as applicable.

(2) A formal change control procedure.

b. There is objective evidence of observance to established procedures.

1Q6. Has the evaluated facility established a record retention schedule for technical data files and the various types of process, test, and quality/inspection system data?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125		§ 21.303	§ 21.613
P		X		
N				

Statement of Condition

There is objective evidence that:

a. A record retention schedule has been established that complies with applicable CFR.

(1) For APIS, TSO authorization, and PMA inspection records, the period is at least 2 years. {§ 21.125; § 21.303; § 21.613}

(2) For TSO authorization technical data file, the period is until the article is no longer manufactured. {§ 21.613}

b. Compliance to retention requirements is periodically verified.

1Q7. Are records analyzed and used to adjust the quality/inspection program?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Method and frequency of analyzing records, and the method for adjusting the quality/inspection program when necessary.

(2) Documenting any quality/inspection system adjustment made that is based on analysis of inspection and test results.

b. There is objective evidence of observance to established procedures.

1S1. Are the organizations responsible for performing service/product support-related functions described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table of organization that describes the functional relationship of the service/product support organization to management and to the other organizational components.

(2) The current purpose and objectives of the service/product support organization.

b. There is objective evidence of observance to established procedures.

1S2. Is an individual identified for managing the service/product support program? Does that person have the necessary authority?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table or organization chart that describes the chain of authority and responsibilities within the service/product support organization.

(2) A list of the authority and responsibility of those who are authorized to make changes to the service/product support system.

b. There is objective evidence of observance to established procedures.

1S3. Is there a requirement for the evaluated facility's service/product support personnel to have training and skills appropriate to their assignments?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures define the method for establishing and maintaining personnel qualifications appropriate to the functions performed.

b. There is objective evidence of observance to established procedures.

1C1. Are the organizations responsible for managing and coordinating activities requiring FAA notification described and their levels of authority defined?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide, as a minimum, a current table of organization that describes the functional relationship of the notifying organizations to management and to the other organizational components.

b. There is objective evidence of observance to established procedures.

1C2. Is an individual identified for managing the notification program? Does that person have the necessary authority?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) A current table or organization chart that describes the chain of authority and responsibilities within the notification system.

(2) A list of the authority and responsibility of those who are authorized to make changes to the notification system.

b. There is objective evidence of observance to established procedures.

1C3. Is there a requirement for the evaluated facility's notification personnel to have training and skills appropriate to their assignments?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures define the method for establishing and maintaining personnel qualifications appropriate to the functions performed.

b. There is objective evidence of observance to established procedures.

SECTION 2. DESIGN DATA CONTROL

1. **SYSTEM ELEMENT DESCRIPTION**. The planning and integration of the evaluated facility's procedures for continuously maintaining the integrity of design data, as approved by the FAA or FAA-delegated representatives, in the completed product. This includes software used in type-certificated aircraft or related products (airborne software).

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

2E1. Are changes to product design (including airborne software) approved, documented, and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include, as a minimum:

(1) Methods for documenting design changes.

(2) A description of the change approval cycle, including personnel authorized to approve changes.

(3) A means of controlling the issuance and distribution of design changes.

b. There is objective evidence of observance to established procedures.

2E2. Is there a drawing control system?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

2E2 (continued)

Statement of Condition

a. Procedures provide for:

(1) Drawings that are adequate, complete, and legible.

(2) Identification of drawings.

(3) Indication of drawing approval, including FAA approval.

(4) Maintenance and security of drawings.

(5) Use of current drawings.

(6) A list of drawings and specifications necessary to define configuration of the FAA-approved design.

(7) Control of preliminary/experimental drawings.

(8) Integration of software with hardware to specify a unique version for incorporation into the product.

(9) Combination of software for more than one processor within one product. That combination of software with associated hardware permits the specification of a unique version for incorporation into the product.

(10) Cross-reference of software documents to their associated software.

(11) Software identification methods that permit verification of the software configuration in the completed product. The drawing control system includes software identification methods at the media level and at the product level. The media level identification is incorporated into the software, and the product level identifications are marked on the outside of the product indicating software configuration.

b. There is objective evidence of observance to established procedures.

2E3. Are changes to technical data (specifications, installation instructions [when applicable], and airborne software documentation) appropriately documented and approved?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide that changes to technical data referenced on FAA-approved design data are documented and approved in the same way as changes to product design.

b. There is objective evidence of observance to established procedures.

2E4. Are corrective actions identified in Airworthiness Directives incorporated into the FAA-approved design, when applicable?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.130	§ 21.165	§ 21.303	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence that design changes necessary to correct unsafe conditions identified in AD's have been incorporated into the FAA-approved design.

2E5. Are design changes incorporated in Instructions for Continued Airworthiness, when appropriate?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.50	§ 21.50	§ 21.50	In each TSO
P				
N				

2E5 (continued)

Statement of Condition

a. There is objective evidence that design changes which affect the content of Instructions for Continued Airworthiness have been incorporated into the FAA-approved design, when applicable. {§ 21.50}

2E6. Are design documents and records stored, maintained, and protected?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures include provisions for:

(1) Storing, maintaining, and protecting design documents to preserve their integrity.

(2) Maintaining the integrity of magnetic storage media used as part of design documentation, if applicable.

b. There is objective evidence of observance to established procedures.

2E7. Are the issuance, retrieval, distribution, and currency of design and technical data documents controlled?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.143	§ 21.303	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence of:

2E7 (continued)

(1) Control of design and technical data document issuance, including persons authorized to obtain documents, and for retrieval of obsolete documents.

(2) The method for making available to, or notifying, employees concerning changes in technical data. {§ 21.125; § 21.143; § 21.303; § 21.607}

(3) Verification that correct documents are in use for the product being produced.

(4) Current design and technical data document distribution lists.

2E8. Is a determination made as to whether a design change is major or minor?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.93	§ 21.93	§ 21.303	§ 21.611
P				
N				

Statement of Condition

a. There is objective evidence that design changes have been properly classified. {§ 21.93; § 21.303; § 21.611}

2E9. Has a technical data file been established and maintained?

Applicability:

	APIS	PC	PMA	TSO
R				§ 21.607; §21.613
P	X	X	X	
N				

Statement of Condition

a. There is objective evidence that a complete and current file of technical data is being maintained, including design drawings and specifications. {§ 21.607; § 21.613}

2E10. Are supplemental type designs submitted for approval only after the type certification process is completed?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide for submitting supplemental type designs for approval after type certification of that product is complete.

b. There is objective evidence of observance to established procedures.

2P1. Does the manufacturing organization participate in the review of design and technical data changes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the manufacturing organization to review design and technical data changes prior to release to ensure that the product can be produced in conformity to FAA-approved design.

b. There is objective evidence of observance to established procedures.

2Q1. Does the quality organization participate in the review of design and technical data changes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

2Q1 (continued)

Statement of Condition

a. There is objective evidence that the quality organization reviews design and technical data changes prior to release to ensure that:

(1) The product can be properly evaluated and verified to be in conformity to FAA-approved design.

(2) Inspection equipment is available or can be procured which will adequately verify conformity to FAA-approved design, and which can be controlled for accuracy, when required.

2S1. Does the service/product support organization participate in the review of design changes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the service/product organization to review design data changes prior to release to ensure that appropriate airworthiness and service documents that are affected by the design change are revised as required.

b. There is objective evidence of observance to established procedures.

2S2. Are changes to Instructions for Continued Airworthiness made available to appropriate persons?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.50	§ 21.50	§ 21.50	In each TSO
P				
N				

2S2 (continued)

Statement of Condition

a. There is objective evidence that changes to Instructions for Continued Airworthiness are made available to appropriate persons. {§ 21.50}

2S3. Is descriptive data and information on FAA-approved design changes resulting from incorporation of AD's, or which contribute to the safety of the product, made available to users of the product?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.99	§ 21.99		
P			X	X
N				

Statement of Condition

a. There is objective evidence that all applicable descriptive data and information covering FAA-approved design changes made as a result of AD incorporation or improvements which contribute to the safety of the product are made available to product users. {§ 21.99}

2C1. Are minor design changes approved under a method acceptable to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.95	§ 21.95	§ 21.303	
P				
N				*

* Reported under criteria 2C4.

Statement of Condition

a. There is objective evidence that minor changes in a type design are approved under a method acceptable to the FAA.

2C2. Are major design changes, including process specification changes, changes resulting from AD's, and changes made to contribute to the safety of the product, submitted to the FAA for approval?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.97 § 21.99 § 21.130	§ 21.97 § 21.99 § 21.165	§ 21.303	§ 21.611
P				
N				

Statement of Condition

There is objective evidence that:

a. Major design changes are submitted to the FAA for approval, including changes to manufacturing and special process specifications.

b. Design changes resulting from applicable AD's, and design changes which contribute to the safety of the product, are submitted to the FAA for approval.

2C3. Are changes to procedures for distributing changes to Instructions for Continued Airworthiness submitted to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.50	§ 21.50		§ 21.50
P			X	X
N				

Statement of Condition

a. There is objective evidence that modifications to the program for distributing changes to Instructions for Continued Airworthiness have been submitted to the FAA. {§ 21.50 and Airworthiness Standards CFR Parts referenced therein}

2C4. Has the TSO authorization facility submitted to the FAA all necessary revised data resulting from a minor change to the TSO article?

Applicability:

	APIS	PC	PMA	TSO
R				§ 21.611
P				
N	X	X	X	

Statement of Condition

a. There is objective evidence that all necessary revised data is submitted to the FAA when minor changes are made to the TSO article. This data agrees with any part number plan specified in the original application. {§ 21.611}

2C5. Has the TSO authorization facility obtained a new TSO for major design changes to a previous TSO article?

Applicability:

	APIS	PC	PMA	TSO
R				§ 21.605 § 21.611
P				
N	X	X	X	

Statement of Condition

a. There is objective evidence that a new type or model designation has been assigned to a changed article and that there has been prompt application for a new TSO authorization. {§ 21.611}

SECTION 3. SOFTWARE QUALITY ASSURANCE

1. **SYSTEM ELEMENT DESCRIPTION**. The planning and integration of the evaluated facility's procedures for continuously maintaining the integrity of software used in type-certificated aircraft or related products (airborne software), and also the integrity of software which is used for product acceptance. Document DO-178, Software Considerations in Airborne Systems and Equipment Certification (current edition), of the Radio Technical Commission for Aeronautics (RTCA), or comparable means, should be used as guidance for control of airborne software.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The criteria used to document the evaluation of this system element are divided into two parts: Part A, Airborne Software, and Part B, Product Acceptance Software.

Part A. Airborne Software

3AE1. Is there a Software Configuration Management Plan (SCMP) or procedure to control airborne software configuration?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Installation of the correct version of the software in the delivered product in accordance with the FAA-approved design.

(2) Method by which controlled software containing the FAA-approved design data is transitioned into production. The media containing the software installed in the product is directly traceable to the Software Configuration Management (SCM) library.

b. There is objective evidence of observance to established procedures.

3AE2. Is there a Configuration Index Document (CID) listing all software documents under configuration control and defining the hardware and software part numbers?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for traceability of hardware and software part numbers to the drawing control system.

b. There is objective evidence of observance to established procedures.

3AE3. Are there practices and procedures for reporting, tracking, and resolving software problems?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Corrective action procedures, for problems found subsequent to the FAA-approved design, include provisions for airborne software and hardware/software combinations. Procedures may parallel or be part of hardware corrective action procedures.

b. Problem reports addressing changes to software code are under change control.

c. The production test procedures have been modified to reflect the software change and successfully executed against the changed version.

d. There is objective evidence of observance to established procedures.

3AE4. Is obsolete and non-current software media recalled and purged, when applicable?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Configuration control procedures for airborne software include methods of purging software for removal of obsolete and non-current media, when applicable. Procedures may parallel or be part of hardware purging procedures.

b. Procedures include methods to identify, store, or dispose of obsolete and non-current media, when applicable.

c. There is objective evidence of observance to established procedures.

3AE5. Are there methods and facilities to protect computer programs from unauthorized access, inadvertent damage, or degradation?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide:

(1) Configuration control of the airborne software within the product design files.

(2) Limited access to software files and protection from unauthorized changes.

(3) Separate archives for masters and duplicates.

(4) That masters and duplicates are not revived by the same machine simultaneously.

3AE5 (continued)

(5) Minimized risk of deterioration and regeneration of errors on selected storage medium.

(6) Assurance that the reproduction of code occurs error free.

b. There is objective evidence of observance to established procedures.

3AE6. Are there procedures to ensure documentation and archival for each version of the delivered airborne software version?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures (i.e., version description document) provide for methods to identify, document and archive the software environment for each version of delivered airborne software.

b. There is objective evidence of observance to established procedures.

3AP1. Is software identified/marked externally/internally in accordance with the engineering drawing requirements?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Work instructions detail the identification/marking requirements.

b. There is objective evidence of observance to established instructions.

3AQ1. Is airborne software programmed media handled and stored properly (e.g., environmental controls and magnetic interference precautions)?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for special handling of programmed media.

b There is objective evidence of observance to established procedures.

3AQ2. Are build and load instructions established, maintained, and used?

Applicability

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide:

(1) Software build and load into hardware components.

(2) Successful testing of the hardware after the software load.

b. There is objective evidence of observance to established procedures.

Part B. Product Acceptance Software

3BE1. Is there a Software Configuration Management Plan (SCMP) or procedure to control product acceptance software configuration?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Identification of software for an application.

(2) Control of approved versions for product acceptance.

(3) Control of obsolete and non-current software.

(4) Identification of software with a Software Configuration Identification.

b. There is objective evidence of observance to established procedures.

3BE2. Are all changes to product acceptance software documented and approved?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the method to change and approve product acceptance software. A procedure patterned after an engineering drawing change procedure is appropriate to provide a permanent record showing reason for change, revisions to the software, approvals, and effectivity.

b. There is objective evidence of observance to established procedures.

3BE3. Are there practices and procedures for reporting, tracking and resolving software-related product acceptance problems?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Corrective action procedures for product acceptance software may parallel or be part of manufacturing's general problem identification and corrective action procedures.

b. There is objective evidence of observance to established procedures.

3BE4. Are there methods and facilities to protect computer programs from unauthorized access, inadvertent damage, or degradation?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide:

(1) Configuration control of product acceptance software to prevent unauthorized changes to the software.

(2) Limited access to software files and protection from unauthorized changes.

(3) Separate archives for masters and duplicates.

(4) That masters and duplicates are not available for corruption in the same machine at the same time.

(5) Minimized risk of deterioration and regeneration of errors on selected storage medium.

3BE4. Continued

(6) Assurance that reproduction of code occurs error free.

b. There is objective evidence of observance to established procedures.

3BQ1. Is product acceptance software verified prior to use?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide:

(1) Independent means to verify product acceptance software, and subsequent revisions, to ensure that I t accomplishes its intended function.

(2) Means to verify software/firmware/hardware is capable of discriminating between conforming and nonconforming parts or assemblies.

(3) Formal means of identifying approved product acceptance software.

(4) Configuration control of the product acceptance software as it relates to the product being accepted.

b. There is objective evidence of observance to established procedures.

3BQ2. Are build and load instructions established, maintained, and used?

Applicability

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide:

(1) Software build and load into hardware components.

(2) Successful testing of the hardware after the software load.

b. There is objective evidence of observance to established procedures.

SECTION 4. MANUFACTURING PROCESSES

1. **SYSTEM ELEMENT DESCRIPTION**. Specific functions and operations necessary for the fabrication and inspection of parts and assemblies (e.g., machining, riveting, and assembling).

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

4M1. Is the evaluated facility operating within the production limitations of the production approval?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.123	§ 21.151	§ 21.303	§ 21.601
P				
N				

Statement of Condition

a. There is objective evidence that the evaluated facility is manufacturing, and identifying as FAA-approved, for sale or installation, only those products which it is authorized to manufacture under its production approval. {§ 21.123; § 21.151; § 21.303; § 21.601}

4M2. Is the production certificate displayed prominently in the main office of the evaluated facility in which the product is manufactured?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.161		
P				
N	X		X	X

Statement of Condition

a. There is objective evidence that the production certificate is prominently displayed as required. {§ 21.161}

4E1. Are manufacturing processes in accordance with FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Preparation and distribution of guidelines for the interpretation and application of approved data, standards, and specifications to product manufacture.

(2) Furnishing of guidelines for the interpretation and application of approved data, standards, and specifications to alternate sources that manufacture duplicate parts.

b. There is objective evidence of observance to established procedures.

4E2. Are new or changed manufacturing processes substantiated by a test program?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for verification/testing of new or changed manufacturing processes by responsible engineering personnel to ensure the process will produce what the design requires.

b. There is objective evidence of observance to established procedures.

4P1. Are manufacturing process changes approved by appropriate personnel?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Approval and control of all process changes by authorized personnel.

(2) Requirements for changing processes.

(3) Review and verification of process changes to ensure product quality is not negatively impacted.

(4) Documentation of change history by responsible personnel.

b. There is objective evidence of observance to established procedures.

4P2. Have work instructions been prepared for all applicable manufacturing processes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Preparation of work instructions to ensure that the work functions to be performed are satisfactorily accomplished.

(2) Content of work instructions.

b. There is objective evidence of observance to established procedures.

4P3. Do work instructions reflect approved technical data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for work instructions to:

(1) Reference the appropriate revision level of technical data documents.

(2) Incorporate specific requirements.

(3) Reflect design changes that correct unsafe conditions identified in ADs.

b. There is objective evidence of observance to established procedures.

4P4. Do work instructions adequately control the manufacturing process?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for detailing the following items:

(1) Function to be performed.

(2) Sequence of operations.

(3) Inspection points.

(4) Accept/reject criteria.

(5) Tools, gauges, and inspection equipment.

4P4 (continued)

(6) Drawing number and revision level.

(7) Workmanship criteria.

(8) Inspection methods.

(9) Tolerance limits.

(10) Environmental conditions.

(11) Sampling plans.

(12) Special drawing notes.

(13) Skilled personnel (certified) required.

(14) Special precautions for critical product protection.

(15) Part marking and identification, and part stamp location requirements, when defined by approved data.

b. There is objective evidence of observance to established procedures.

4P5. Are revisions to work instructions reviewed, approved, controlled, and documented?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Method by which temporary changes are approved by authorized personnel and controlled, and include a time interval for formal incorporation.

(2) Control of the number of temporary changes allowed before requiring complete incorporation and revision of work instructions.

(3) Control and documentation of revisions to work instructions.

(4) Method by which revisions are identified on the work instructions.

(5) Coordination of changes to work instructions with affected departments, such as Planning and Quality.

(a) Authorized quality organization personnel review work instructions prior to release to ensure that:

1 Inspection points are located in the manufacturing process at points that ensure conformity to FAA-approved design.

2 Adequate inspection equipment will be available and will be controlled for accuracy, as necessary.

(b) Authorized quality organization personnel authorize additions, deletions, or changes to inspection points in the work instructions, based upon inspection results.

(6) Record of work instruction changes.

(7) Control of obsolete work instructions.

b. There is objective evidence of observance to established procedures.

4P6. Are employees familiar with specifications (proprietary, industry, military) affecting jobs they perform?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Personnel performing manufacturing operations have applicable specifications available for use, and have a working knowledge of their content as appropriate to the operations being performed.

4P7. Are special identification and controls required if material or parts are introduced into production prior to full acceptance?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Special identification and controls for material or parts introduced into production prior to full acceptance or release.

(2) Conditions in which the pre-release of material or parts will be allowed.

(3) Obtaining appropriate documented approvals prior to pre-release.

(4) Documentation of each pre-release to show approvals, reasons for pre-release, and where in the production line material or parts are allowed to progress until full release is obtained.

(5) Identification of material or parts in such a manner that they can be retrieved if full release is not obtained.

b. There is objective evidence of observance to established procedures.

4P8. Is traceability for split lots maintained, including accountability for the completion of all manufacturing and inspection operations?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

4P8 (continued)

(1) Control of split lots.

(2) Accountability of products through each stage of the manufacturing process.

(3) Accountability for shortages/overages as successive operations are performed.

b. There is objective evidence of observance to established procedures.

4P9. Do completed products/parts have proper identification markings?

Applicability:

	APIS	PC	PMA	TSO
R	§§ 45.11, 45.14	§§ 45.11, 45.14	§§ 45.15, 45.14	§ 21.607, 45.14
P				
N				

Statement of Condition

There is objective evidence that completed products/parts are properly identified and legible:

a. Aircraft and aircraft engines are identified by means of a fireproof plate and have the required identification data. {§ 45.11}

b. Propellers, propeller blades, and hubs are identified by means of a plate, stamping, engraving, etching, or other approved method of fireproof identification, and have the required identification data. {§ 45.11}

c. Manned free balloons are identified by means of a fireproof plate and have the required identification data. {§ 45.11}

d. For TSO authorizations, articles are identified with the name and address of the manufacturer, the name, type, part number, or model designation of the article, the serial number or the date of manufacture or both, and the applicable TSO number. {§ 21.607}

4P9 (continued)

e. For PMA, parts are identified with the letters "FAA-PMA"; the name, trademark, or symbol of the approval holder; the part number; and the name and model designation of each type certificated product on which the part is eligible for installation. For parts that the FAA finds are too small or impractical to mark, a tag may be attached that must contain the information that can not be included on the part, or may refer to specific part manuals or catalogs. {§ 45.15}

f. For critical components, parts are permanently and legibly marked with a part number (or equivalent) and a serial number (or equivalent). {§ 45.14}

4P10. Have aircraft been identified with nationality and registration marks?

Applicability:

	APIS	PC	PMA	TSO
R	Part 45 Subpart C	Part 45 Subpart C		
P				
N			X	X

Statement of Condition

a. There is objective evidence that nationality and registration marks are displayed on fixed wing and non-fixed wing aircraft, and are properly located and sized. {Part 45 Subpart C}

4Q1. Are inspection methods and plans for each product/part thereof selected to ensure that parts will be inspected for conformity with FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.143	§ 21.303	§ 21.607
P				
N				

a. There is objective evidence that parts, components, and assemblies are inspected during production.
{§§ 21.125, 21.143, 21.303, 21.607} The inspection plan should consider, as a minimum:

(1) Documentation and availability of criteria for determining appropriate inspection methods (attribute/characteristics).

4Q1 (continued)

Statement of Condition

(2) Physical inspection and process control methods whenever either method alone is not sufficiently capable of determining the quality of parts.

(3) Controls of the manufacturing system when physical inspection of parts or processed material is impossible or disadvantageous.

4Q2. Have lists or charts showing location and type of inspection stations been prepared?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.165		§ 21.607
P	X		X	
N				

Statement of Condition

a. There is objective evidence that lists or charts have been prepared identifying the location and types of inspection stations that have been established to determine conformity of the product to FAA-approved design data. {§ 21.165; § 21.607}

4Q3. Are inspection marking devices/stamps issued to authorized persons only?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Responsibility for control of stamps.

4Q3 (continued)

(2) A listing of stamps issued to personnel.

(3) Handling of lost or returned stamps.

(4) Periodic check of all stamps to ensure legibility of stamp impressions and possession of stamps by correct personnel.

b. There is objective evidence of observance to established procedures.

4Q4. Is there assurance that inspection stamps do not damage material?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures detail the type of stamps to use for the various materials that will require stamp impressions.

b. There is objective evidence of observance to established procedures.

4Q5. Are records generated and maintained for all significant provisions of the quality/inspection program which have an effect on control of the FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

4Q5 (continued)

(1) Contents of each record used, including, as a minimum, the nature and number of observations, the number and type of discrepancies found, lot identity and size, sample sizes, and resultant corrective action.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

(4) Generation of records of:

(a) Inspection and tests for product acceptance, and include, as a minimum, applicable drawing/specification number and revision levels.

(b) Results of inspection and tests for first production configuration articles.

(c) In-process inspections used to determine acceptability to FAA-approved design data.

(d) Final inspection acceptability of completed end items.

(e) Periodic inspection and control of tools used as a media of inspection, including check fixtures, inspection gauges, and measurement instruments.

(f) Test data directly traceable to the material, parts, or products tested.

b. There is objective evidence of observance to established procedures.

4Q6. Are cleaners, solvents, degreasers, etc., adequately identified and controlled to prevent potential product damage from misapplication?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

4Q6 (continued)

(1) Decanting and identifying cleaners, solvents, and other fluids used in the work area, specifying types of containers to be used, requirements for re-use, and method of identification.

(2) Identifying the methods to be used when potentially damaging fluids are misapplied to a product.

b. There is objective evidence of observance to established procedures.

4Q7. Are conditions in environmentally controlled areas, (e.g., temperature, humidity, or chemical contamination) established and maintained, when required?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Type of equipment for recording environmental conditions, when required.

(2) Monitoring environmental conditions and implementing corrective action for conditions exceeding specifications.

(3) Identification of manufacturing areas that require environmental controls (e.g., "temperature controlled," "no smoking," "gloves required for parts handling," or "signs").

(4) Responsibility for enforcement of environmental controls.

b. There is objective evidence of observance to established procedures.

4Q8. Are traceable components identified in assembly records?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the identification of traceable components in assembly records.

b. There is objective evidence of observance to established procedures.

4Q9. Are completed parts traceable to raw material, when applicable?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Traceability of completed part to raw material through records.

(2) Marking traceable parts and record-keeping requirements.

(3) Handling reject and scrap traceable parts.

b. There is objective evidence of observance to established procedures.

4Q10. Is suitable inspection marking made of products and parts thereof throughout the manufacturing cycle, (e.g., acceptance, rejection, NDT process)?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide methods of marking that ensure:

(1) Conformance to the requirements of the FAA-approved design data.

(2) Positive identification throughout the manufacturing process.

b. There is objective evidence of observance to established procedures.

4Q11. Are assemblies inspected before closure to preclude inclusion of foreign objects?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Inspection of assemblies to detect inclusion of foreign objects prior to closure.

(2) Reinspection of parts and assemblies which are reopened, disassembled, or tampered with.

(3) Contamination control in hydraulic installations (e.g., purging, filtration, charging, and disposal).

b. There is objective evidence of observance to established procedures.

4Q12. Are all required inspections and tests satisfactorily accomplished and documented prior to final acceptance of the completed products/parts thereof?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the inspections and tests required to be completed for final acceptance of the completed products/parts thereof.

b. There is objective evidence of observance to established procedures.

SECTION 5. SPECIAL MANUFACTURING PROCESSES

1. **SYSTEM ELEMENT DESCRIPTION**. The methods whereby materials, parts, or assemblies are worked or fabricated through a series of precisely controlled steps, and which undergo physical, chemical, or metallurgical transformation (e.g., heat-treating, brazing, welding, and processing of composite materials).

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

5E1. Are all special processes in use identified and defined by FAA-approved design data and detailed in process specifications?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.31	§ 21.31	§ 21.303	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence that: Special processes are identified and documented in FAA-approved design data and/or process specifications. [§§ 21.31, 21.303, 21.607} Process specifications detail personnel qualifications, material and equipment requirements, accept/reject criteria, etc.

5E2. Are new or changed special processes substantiated by a test program?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for verification/testing of new or changed special processes by responsible engineering personnel to ensure the process will produce what the design requires.

b. There is objective evidence of observance to established procedures.

5Q1. Is equipment required for special processing, such as tools, gauges, instruments, timers, ammeters, or voltmeters, available?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for identification and availability of all equipment required for controlling and monitoring special processes.

b. There is objective evidence of observance to established procedures.

5Q2. Are processes, equipment, and/or operators qualified and approved in accordance with the specification/manufacturer's procedures?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Periodic review of special processes to ensure specification compliance.

(2) Periodic review of personnel certifications to ensure only qualified operators perform special processing.

b. There is objective evidence of observance to established procedures.

5Q3. Are special processes accomplished in accordance with the established process specifications?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.165	§ 21.303	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence that all requirements listed in applicable process specifications have been completed. {§§ 21.125, 21.165, 21.303, 21.607}

5Q4. Are records generated and maintained to reflect compliance with the specification requirements?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for use of records that indicate:

(1) Contents of each record used, including, as a minimum:

(a) Complete and continuous monitoring of special processes per specification requirements.

(b) Product identity and material traceability throughout the processing cycle.

(c) Special process inspection approval, such as unique special process inspection approval stamps.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

b. There is objective evidence of observance to established procedures.

5Q5. Is action taken to correct a special manufacturing process which is found to be out of control?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Action when there is loss of control.

(2) Investigation to ensure acceptability of products produced while the process was out of control.

(3) Corrective action as a result of the analysis of trends in process, to prevent nonconforming products.

b. There is objective evidence of observance to established procedures.

SECTION 6. STATISTICAL QUALITY CONTROL (SQC)

1. **SYSTEM ELEMENT DESCRIPTION**. A method which may be used by the evaluated facility to control product quality by statistical methods, and which may be used for continuous improvement and/or product acceptance. It includes techniques such as statistical sampling, PRE-control, and statistical process control (SPC).

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

6E1. Does the engineering organization participate in the review, implementation, and maintenance of SQC techniques?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the engineering organization to review SQC planning prior to release to ensure the maintenance of FAA-approved design.

b. There is objective evidence of observance to established procedures.

6P1. Does the manufacturing organization participate in the review, implementation, and maintenance of SQC techniques?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

6P1 (continued)

Statement of Condition

a. Procedures provide for the manufacturing organization to review SQC planning prior to release to ensure that the product can be produced in conformity to FAA-approved design.

b. There is objective evidence of observance to established procedures.

6Q1. Has a statistical sampling inspection plan been established for acceptance of specified product characteristics at receiving inspection and during manufacture?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. There is objective evidence that:

(1) All characteristics essential to ensure compliance to FAA-approved design have been identified. Characteristics which, if not maintained, would, or may, cause an unsafe condition in the end product are identified separately.

(2) Product characteristics identified as having an impact on the safety of the end product have been 100 percent inspected.

(3) Samples have been selected which adequately represent the lot or process.

(4) Adjustments to the sampling plan are based on acceptance and quality history, and that the sampling plan is tightening to 100% inspection when nonconformances affecting safety are discovered.

(5) Statistical inspection conforms with sampling specifications or approved sampling plan requirements.

(6) Sampling plans do not allow the acceptance of "known defectives" in a lot, or Acceptable Quality Levels (AQLs) with known defectives, that would affect safety.

6Q2. Are pertinent personnel trained in statistical sampling techniques?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Responsibility for statistical sampling training.

(2) Training new, or newly transferred, employees in statistical sampling techniques.

b. There is objective evidence of observance to established procedures.

6Q3. Has a satisfactory PRE-control method been established for acceptance of specific product characteristics?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures should provide:

(1) Authority and responsibility for implementation and control of PRE-control.

(2) Scheduled independent evaluations of the PRE-control process to verify its continuing acceptability. This includes a conformity check of the product on a periodic basis.

(3) Identification of principal process characteristics, of the product to be controlled, and a determination as to the impact that a nonconformance would have on the safety of the end product.

6Q3 (continued)

(4) Capability studies using statistical techniques, ensuring process capability is less than the tolerance of the specific product characteristic to be measured.

(5) Test and measurement equipment study (e.g., a gauge study) to identify, eliminate, or adjust for, measurement errors that may contribute to process variability.

(6) Establishment of PRE-control limits, based on the tolerance of the specific product characteristic to be measured, to ensure maintenance of in-control processes.

(7) Qualification of the setup during production, ensuring that a minimum of five consecutive parts measured fall within the target area established by the PRE-control limits.

(8) Periodic measurement during production after the setup is qualified.

(9) Corrective action to adjust the process, requalify the setup, and recall and reinspect suspected products when PRE-control limits are exceeded.

b. There is objective evidence of observance to established procedures.

6Q4. Are pertinent personnel trained in PRE-control techniques?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Responsibility for PRE-control training.

(2) Training new, or newly transferred, employees in PRE-control techniques.

b. There is objective evidence of observance to established procedures.

6Q5. Has a satisfactory SPC method been established for acceptance of specific product characteristics?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Authority and responsibility for implementation and control of SPC.

(2) Scheduled independent evaluations of the SPC process to verify its continuing acceptability. This includes a conformity check of the product on a periodic basis.

(3) Identification of principal process characteristics, of the product to be controlled, and a determination as to the impact that a nonconformance would have on the safety of the end product.

(4) Identification of the types of control charts to be used to ensure maintenance of in-control processes. Variable control charts include charting for both range and variation around the mean.

(5) Capability studies to determine that the process can yield a product that conforms to FAA-approved design data.

(6) Test and measurement equipment study (e.g., a gauge study) to identify, eliminate, or adjust for, measurement errors that may contribute to process variability.

b. There is objective evidence of observance to established procedures.

6Q6. Are pertinent personnel trained in SPC techniques?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

6Q6 (continued)

Statement of Condition

a. Procedures provide for:

(1) Responsibility for SPC training.

(2) Training new, or newly transferred, employees in SPC techniques.

b. There is objective evidence of observance to established procedures.

6Q7. Are appropriate SPC control limits and subgroup selection being used?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Subgroups representative of the product lot.

(2) Avoidance of subgroup selection biases (e.g., patterns, ease of sampling, or pre-selection).

(3) Determination and adjustment of appropriate control limits for each process.

b. There is objective evidence of observance to established procedures.

6Q8. Are criteria defined for determining when an SPC process is considered to be out of control?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

6Q8 (continued)

Statement of Condition

a. Procedures define rules for out-of-control conditions and are available to operators or process checkers.

b. There is objective evidence of observance to established procedures.

6Q9. Is regular review of the SPC charts made to determine changes (e.g., shifts) in the process?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Review and retention of charts.

(2) Identification of personnel with the authority to stop the process when necessary.

b. There is objective evidence of observance to established procedures.

6Q10. Is corrective action required when an SPC control chart shows the process is out of control?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

6Q10 (continued)

(1) Corrective action for an out-of-control condition.

(2) Notification of functional areas when an out-of-control condition is found, their responsibilities, and response time.

b. There is objective evidence of observance to established procedures.

6Q11. Is additional inspection conducted to ensure product is acceptable, while corrective action is being taken, if acceptance has been made on the basis of SPC?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Continuous inspection during corrective action of the process.

(2) Implementing additional inspection, such as a designated level of increased inspection.

(3) Control charts to verify that the process continues to run within upper and lower control limits during corrective action procedures.

(4) Evaluation of the need for purge action, to remove suspected nonconforming products, when a control chart used for acceptance shows an out of control condition.

b. There is objective evidence of observance to established procedures.

SECTION 7. TOOL AND GAUGE

1. **SYSTEM ELEMENT DESCRIPTION**. The function which establishes control of precision measuring devices (e.g., tools, scales, gauges, fixtures, instruments, or automated measuring machines) used in fabrication, special processing, inspection, and test of detail parts, assemblies, and completed products to determine conformity to FAA-approved design.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

7E1. Does engineering participate in the selection of precision measuring devices?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for engineering involvement in the selection of precision measuring devices used in fabrication, inspection, and test to ensure that the precision and accuracy required for each design feature are satisfactorily achieved.

b. There is objective evidence of observance to established procedures.

7P1. Are the precision measuring devices used for fabrication and special processing appropriate to determine the required design features?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

7P1 (continued)

Statement of Condition

a. Procedures provide for selection and use of only those measuring devices which will accurately determine the required design features. This includes appropriate determinations of, and adjustments for, the effects of tool wear.

b. There is objective evidence of observance to established procedures.

7Q1. Are tools and gauges initially approved and periodically inspected and calibrated?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Test and measurement equipment study (e.g., a gauge study) to identify, eliminate, or adjust for, measurement errors that may contribute to variability.

(2) Establishment of the accuracy of all measurement devices prior to initial use.

(3) Periodic inspection and calibration of all measurement devices at prescribed intervals, or just prior to use, that will ensure their continued accuracy.

(4) Assignment of calibration intervals to all measurement devices to ensure continued accuracy and reliability.

(5) Establishment of initial calibration intervals and allowable conditions for adjusting the interval.

b. There is objective evidence of observance to established procedures.

7Q2. Are procedures provided for the inspection and testing of all equipment and tooling used for the acceptance of drawing characteristics?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) A list of measurement devices and test equipment used to determine conformity of characteristics being inspected.

(2) Calibration methods for each measurement device.

(3) Environmental controls, standards, and equipment to be used.

(4) Calibration by qualified personnel.

b. There is objective evidence of observance to established procedures.

7Q3. Does a tool and gauge recall system exist?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) A documented mandatory recall system to ensure all measurement devices, calibration standards, and production tooling used for product acceptance are recalibrated at prescribed intervals.

(2) Control of measurement devices and standards that are overdue for calibration.

7Q3 (continued)

b. There is objective evidence of observance to established procedures.

7Q4. Are calibrations traceable to the National Institute of Standards and Technology or recognized international standards?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for calibrations traceable to recognized national standards. If no national standard exists, the basis for calibration is documented.

b. There is objective evidence of observance to established procedures.

7Q5. Do standards used for calibrating tools, gauges, and instruments have adequate accuracy (a minimum of 4 times more accurate than the calibrated gauge, if possible)?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Accuracy, stability, range, and resolution of the standard used for calibration appropriate for the measurement device characteristic being calibrated. The accuracy ratio of the standard is dependent on the evaluated facility's measurement requirements and may be limited by current state-of-the-art.

(2) Methodology to determine adequacy of the calibration standards.

(3) Certificates, reports, or data sheets attesting to the accuracy of all calibration standards.

7Q5 (continued)

b. There is objective evidence of observance to established procedures.

7Q6. Are tools and gauges calibrated and used in an acceptable environment, when specified?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Identification of environmental conditions that are necessary for use and calibration of measurement devices and standards.

(2) Appropriate use of measurement devices and standards in environmental conditions that might affect accuracy, stability, or calibration, such as: temperature, relative humidity, vibration, electrical interference, cleanliness, or other controllable factors.

(3) Compensating corrections to calibration or measurement results obtained in an environment that departs from acceptable conditions.

b. There is objective evidence of observance to established procedures.

7Q7. Does equipment used for inspection and test have the degree of accuracy necessary to determine conformity of the characteristic being inspected?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

7Q7 (continued)

(1) The degree of accuracy of all measurement devices and test equipment.

(2) Measurement devices and test equipment capable of the accuracy necessary and adequate for the intended purpose, including measurement devices and test equipment substituted for those specified.

b. There is objective evidence of observance to established procedures.

7Q8. Has a procedure been established for the use of personal gauges for product acceptance?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Inclusion in the calibration system of personally-owned gauges used for product acceptance.

(2) Assignment of a unique identifier.

b. There is objective evidence of observance to established procedures.

7Q9. Are tool control procedures applied to equipment required for special processing, such as tools, gauges, instruments, timers, ammeters, voltmeters, or bit pattern transfer hardware?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for periodic calibration of instrumentation used for controlling and monitoring special processes and for generation and maintenance of records.

7Q9 (continued)

b. There is objective evidence of observance to established procedures.

7Q10. Are tool control procedures applied to NDI equipment?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Periodic calibration of NDI equipment, and for generation and maintenance of records.

(2) Measurement of black light intensity on a periodic basis (preferably daily) using a calibrated black light meter.

(3) Measurement of white lights on a periodic basis using a calibrated white light meter.

b. There is objective evidence of observance to established procedures.

7Q11. Are tool control procedures applied to production tooling used as a media for acceptance?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Accuracy and repeatability of production tooling used for product acceptance prior to use.

(2) Inclusion in the calibration system.

7Q11 (continued)

(3) Assignment of unique identifiers.

(4) Availability of current applicable tool drawings.

b. There is objective evidence of observance to established procedures.

7Q12. Are calibration records generated and maintained on all equipment used for acceptance purposes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for use of records that indicate:

(1) Contents of each record used, including, as a minimum:

(a) Nomenclature.

(b) Serial number.

(c) Location.

(d) Details of all adjustment.

(e) Repair or rework accomplished.

(f) Calibration history.

(g) Source and date next inspection is due.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

b. There is objective evidence of observance to established procedures.

7Q13. Are calibration intervals adjusted based on reliable data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for adjustment of calibration intervals based on analysis of previous calibration results, wear, stability, purpose, and degree of usage.

b. There is objective evidence of observance to established procedures.

7Q14. Are gauges uniquely identified to show acceptability for use?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Unique identification of individual measurement devices and standards to provide traceability to the calibration records.

(2) Indication of the calibration status of measurement devices and standards. Typically, labels are used but other suitable controls can be provided.

(3) Use of the calibration status for monitoring adherence to calibration intervals.

b. There is objective evidence of observance to established procedures.

7Q15. Are tools and gauges protected, maintained, and replaced, as required, to ensure product conformity to FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Methods for handling, transporting, and storing measurement devices and standards to ensure required accuracy and reliability are maintained. Methods are usually in accordance with equipment manufacturer's recommendations and established industry practices.

(2) Actions taken when improper handling or storage occurs. As a minimum, an investigation is made to determine the adverse effects and action to be taken.

(3) Replacement of measurement devices and standards, as required, to ensure product conformity to FAA-approved design data.

(4) Storage of measurement devices and standards appropriate to maintain required accuracy and fitness for use. Vibration, shock, temperature variations, humidity and contamination are some of the detrimental factors the procedure considers.

b. There is objective evidence of observance to established procedures.

7Q16. Are standards, inspection tools, gauges, instruments, jigs, etc., that are inaccurate or beyond the scheduled calibration cycle identified and precluded from use until rework or recalibration is accomplished?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

7Q16 (continued)

Statement of Condition

a. Procedures provide for identification and control of measurement devices and standards that require rework or recalibration.

b. There is objective evidence of observance to established procedures.

7Q17. Is there a method to determine the percent of uncertainty contributed by a measurement device or standard when it is significantly out of tolerance?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Determination of what constitutes a significant out-of-tolerance (SOT) condition for each measurement device or standard. This should be when the out-of-tolerance condition could adversely affect product quality or safety.

(2) Determination of the degree of uncertainty contributed to the measurement by a significantly out-of-tolerance device or standard. This should not exceed 25%.

b. There is objective evidence of observance to established procedures.

7Q18. Is evaluation made of the need for action on a product which has been accepted by a significantly out-of-tolerance gauge?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

7Q18 (continued)

Statement of Condition

a. Procedures provide for:

(1) Documenting a significant out-of-tolerance condition, and investigating the validity of previous measurements.

(2) Notification of the significant out-of-tolerance condition to the user of the measurement device or standard.

b. There is objective evidence of observance to established procedures.

7Q19. Are there acceptable methods of tool and gauge rework and reinspection?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide appropriate methods for rework of measurement devices and standards, and include sufficient reinspections to ensure accuracy.

b. There is objective evidence of observance to established procedures.

7S1. Does the service/product support organization participate in the investigation of significant out-of-tolerance conditions?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

7S1 (continued)

Statement of Condition

a. Procedures provide for service/product support organization involvement in investigations of out-of-tolerance conditions to ensure that conditions which adversely affect product quality or safety are reported to the FAA and the user, as required.

b. There is objective evidence of observance to established procedures.

SECTION 8. TESTING

1. **SYSTEM ELEMENT DESCRIPTION**. The function which provides for static, destructive, and functional tests of production products/parts thereof to ensure conformity to FAA-approved design.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

8E1. Are test procedures or instructions applicable to the product/parts thereof established, maintained, and used?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Preparation and maintenance of test procedures and instructions applicable to the products/parts produced to ensure that each article conforms to FAA-approved design data. Test documents include the following, as applicable:

(a) Original, and recurring, correlation and calibration (to an established standard or baseline determined by the facility and approved by the FAA) of aircraft engine test cells for the verification, validation, and repeatability of acceptance testing.

(b) Preparation and maintenance of a production flight test procedure and flight checkoff form(s) {§ 21.127; § 21.143}. A production flight test procedure includes, as a minimum {§ 21.127}:

1 An operational check of the trim, controllability, or other flight characteristics to establish that the production aircraft has the same range and degree of control as the prototype aircraft.

2 An operational check of each part or system operated by the crew while in flight to establish that, during flight, instrument readings are within normal range.

8E1 (continued)

3 A determination that all instruments are properly marked, and that all placards, required flight manuals, and supplements are installed after flight test.

4 A check of the operational characteristics of the aircraft on the ground.

5 A check on any other items peculiar to the aircraft being tested that can best be done during the ground or flight operation of the aircraft.

(c) Final test of the completed product/parts. {§ 21.143}

(2) Actions to be taken when tests fail.

b. There is objective evidence of observance to established procedures.

8E2. Are changes to test procedures/instructions adequately controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Approval and control of all test procedure and instruction changes by authorized personnel.

(2) Requirements for changing test procedures and instructions.

(3) Review and verification of test procedure/instruction changes to ensure product quality is not negatively impacted.

(4) Documentation of test procedure/instruction change history by responsible personnel.

b. There is objective evidence of observance to established procedures.

8E3. In the case of aircraft, is the flight checkoff form properly completed?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.127	§ 21.165		
P				
N			X	X

Statement of Condition

a. There is objective evidence that:

(1) Flight checkoff form(s)have been prepared. {§ 21.127; § 21.165}

(2) Forms are legible, complete, and accurate.

(3) Flight test discrepancies and their correction have been documented.

(4) Satisfactory completion of all flight test requirements has been verified.

8E4. In the case of aircraft, is the evaluated facility using flight test pilots who have been fully qualified?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide for the use of flight test pilots with current FAA medical certificates, who have maintained aircraft currency requirements for the model(s) being flown, and who have necessary qualifications for any special procedures required.

b. There is objective evidence of observance to established procedures.

8E5. In the case of aircraft, does the evaluated facility have a flight safety program?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide for a flight safety program that includes, as a minimum:

(1) Monitoring of crew duty hours.

(2) Periodic review of accidents and incidents.

(3) Mandatory safety meetings.

b. There is objective evidence of observance to established procedures.

8P1. Does the manufacturing organization participate in the review of test instructions or procedures?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for the manufacturing organization to review test instructions or procedures prior to release to ensure that the product can be tested in conformity to FAA-approved design.

b. There is objective evidence of observance to established procedures.

8Q1. Does the quality organization participate in the review of test instructions or procedures?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Quality organization review of test instructions or procedures prior to release to ensure that:

(a) The product can be properly evaluated and verified to be in conformity to FAA-approved design. This includes the identification of inspection points that ensure conformity to FAA-approved design.

(b) Inspection equipment is available or can be procured which will adequately verify conformity to FAA-approved design, and which can be controlled for accuracy, when required.

(2) Approved quality organization personnel to authorize additions, deletions, or changes to inspection points in the test instructions or procedures, based upon inspection results.

b. There is objective evidence of observance to established procedures.

8Q2. Are engine inlets and test cells inspected for foreign objects before engine start?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide, as applicable:

(1) Preflight ground handling provisions that include foreign object controls.

8Q2 (continued)

(2) Careful inspection of ducts and cowlings for foreign objects (e.g., tools, hardware, wire, burrs, ties, dust, dirt, loose adhesive, and loose torque paint particles) before initial engine start.

(3) Periodic inspection of runways and taxiways to ensure pavement areas are maintained and debris that could be ingested are not present during engine run.

(4) Preventative maintenance and good housekeeping practices for test cells.

(5) Accomplishment of the following items, as a minimum, in the test cell before test article start-up:

(a) Test environment is clean and free from foreign objects.

(b) Hand tools are secured.

(c) Fixtures, dollies, and special test equipment are properly secured.

(d) Engine inlet screens, covers and engine components are properly secured to prevent ingestion.

(e) An engine review to verify that no loose hardware, wire, burrs, ties, dust, dirt, adhesive, torque paint particles, cotter pins, etc. exist.

(6) Inspection of the test article after test cell or aircraft operation has been completed for damage and reinstallation of all protective covers.

b. There is objective evidence of observance to established procedures.

8Q3. Are records of completed tests of aircraft, engines, or propellers generated and maintained?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide for:

8Q3 (continued)

(1) Contents of each record used, including, as a minimum:

(a) Test results.

(b) Test nonconformances.

(c) Corrective action.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

b. There is objective evidence of observance to established procedures.

8Q4. Are products/parts thereof which have been adjusted or reworked after test acceptance retested to approved procedures?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures outline the requirements for retest of products/parts adjusted or reworked after inspection acceptance when that adjustment or rework could have an impact on the performance of those products/parts.

b. There is objective evidence of observance to established procedures.

8Q5. Is post-test teardown inspection and retest conducted and recorded, as applicable?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

8Q5 (continued)

Statement of Conditions

a. Procedures provide for:

(1) A specified schedule of post-test teardown inspection to verify product quality, followed by rebuild and retest.

(2) A higher frequency of post-test teardown inspection for new products until the adequacy of assembly tooling, instruction, and techniques has been demonstrated.

(3) Preparing and maintaining records of post-test teardown inspection results.

(4) Notification of responsible manufacturing and engineering areas regarding noted nonconformances.

b. There is objective evidence of observance to established procedures.

8C1. Have the flight test procedures been approved by the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.127	§ 21.143		
P				
N			X	X

Statement of Condition

a. There is objective evidence that flight test procedures have been approved by the FAA prior to flight test. {§ 21.127; § 21.143}

8C2. Are changes to the approved production flight test procedure and flight checkoff form(s) submitted to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.127	§ 21.147		
P				
N			X	X

8C2 (continued)

Statement of Condition

a. There is objective evidence that changes to approved production flight test procedures and flight checkoff form(s) are submitted to the FAA. {§ 21.127; § 21.147}

8C3. Has the established standard or baseline for aircraft engine test cell correlation and calibration been approved by the FAA?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures ensure that standards or baselines used for aircraft test cell correlation and calibration are approved by the FAA prior to using the test cell.

b. There is objective evidence of observance to established procedures.

SECTION 9. NONDESTRUCTIVE INSPECTION (NDI)

1. **SYSTEM ELEMENT DESCRIPTION**. The development and application of technical methods to examine materials or components in ways that do not impair future usefulness and serviceability in order to detect, locate, measure and evaluate discontinuities, defects, and other imperfections; to assess integrity, properties, and composition; and to measure geometrical characters. (Reference: ASTM E1316)

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

9E1. Are NDI processes reviewed for conformance with FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for engineering review of NDI processes to ensure that FAA-approved design is maintained.

b. There is objective evidence of observance to established procedures.

9E2. Are NDI processes, including changes, properly documented and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

9E2 (continued)

Statement of Condition

a. Procedures define a method of identifying and controlling revision levels of released NDI instructions.

b. There is objective evidence of observance to established procedures.

9Q1. Are operators qualified, certified, recertified, and decertified by the evaluated facility, as required, by specification/evaluated facility's procedures?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Initial qualification testing of inspectors before issuance of acceptance stamps.

(2) Requalification of inspectors on a prescribed periodic basis.

(3) Vision requirements and retest on a periodic basis.

(4) Inspectors to provide identification of various levels of qualifications and various fields of expertise.

(5) Qualification of inspectors by authorized personnel.

(6) Identification and notification when requalification and vision tests are required.

(7) Documentation of employee's qualification.

(8) Appropriate decertification methods for operators failing to maintain qualifications.

b. There is objective evidence of observance to established procedures.

9Q2. Are qualified operators performing within their limits of authorization?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide the limits of authority for conducting and interpreting test results, or writing test reports.

b. There is objective evidence of observance to established procedures.

9Q3. Are current applicable NDI procedures/process specifications readily available and used by inspection personnel?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for controlled and detailed methods of inspection in each area of application.

b. There is objective evidence of observance to established procedures.

9Q4. Are tanks and solutions checked for compliance with specified operating conditions?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

9Q4 (continued)

Statement of Condition

a. Procedures provide for:

(1) Periodic samples of tank solutions to ensure compliance with operating specifications.

(2) Processing of lab reports in a timely manner to ensure that out-of-control conditions are responded to immediately.

b. There is objective evidence of observance to established procedures.

9Q5. Are adequate test pieces and NDI known-defect samples available?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Test pieces and samples that adequately reflect the part configuration.

(2) Test pieces and samples containing minimum size anomalies, as required, that would cause rejection of the part.

(3) Availability of American Society for Testing and Materials (ASTM) Standards, or other reference material, for radiographic film interpretation, when required.

b. There is objective evidence of observance to established procedures.

9Q6. Are NDI known-defect samples identified to preclude introduction into the production system?

9Q6 (continued)

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide the method to identify samples with known defects used to establish NDI so as to distinguish them from production items and prevent their introduction into the production system.

b. There is objective evidence of observance to established procedures.

9Q7. Are products/parts thereof properly handled to prevent damage, contamination, corrosion, foreign object ingestion, etc?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Solution selection that precludes rust or corrosion.

(2) Retention of protective covers on parts (e.g., caps, plugs, or plates), if possible, while undergoing the inspection process. Any protective covers which have been removed are reinstalled after the inspection process is completed.

(3) Special holding fixtures if necessary to facilitate inspection methodology.

b. There is objective evidence of observance to established procedures.

9Q8. Is there acceptance and rejection criteria current with FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Acceptance/rejection criteria which have been coordinated with the FAA, or the PAH if applicable.

(2) Additional review of marginal inspection results by authorized personnel prior to acceptance.

(3) Use of acceptance/rejection criteria during inspection.

(4) Control of the revision level and for removal of obsolete acceptance/rejection criteria.

(5) Identification of personnel authorized to review and update acceptance/rejection criteria.

b. There is objective evidence of observance to established procedures.

9Q9. Are records generated and maintained to accurately reflect compliance with specification requirements?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Contents of each record used.

9Q9 (continued)

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

(4) Generation of:

(a) Inspection records that include:

1 Acceptance of material.

2 Inspector responsible for each area of test.

3 Date of acceptance.

4 Lot or serial number.

(b) Qualification records for NDI operators that include:

1 Level of certification.

2 Educational background and experience.

3 Statement of satisfactory completion of training.

4 Results of most recent visual acuity examination.

5 Actual grades obtained in each examination.

6 Percentile weight assigned to each examination.

7 Composite grade of all examinations.

8 Date of certification or recertification, or both.

9 Signature of NDI examiner.

b. There is objective evidence of observance to established procedures.

9Q10. Is corrective action taken when an NDI process is found to be out-of-control?

9Q10 (continued)

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for an investigation to ensure continued acceptability of products accepted while the NDI process was out-of-control.

b. There is objective evidence of observance to established procedures.

9Q11. Are the critical parameters of the radiographic process identified and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Radiographic film processing per written procedures or manufacturer's instructions.

(2) Mixing of solutions in accordance with manufacturer's instructions.

(3) Control of solution temperatures, replenishing rates, and film travel as required to produce film of the required density, free of spots, streaks, fog, or scum.

(4) Periodic development of process control check strips and recording of densities.

(5) Periodic evaluation of uniformity of exposure.

(6) Film identification so as to have sufficient information to provide traceability and date of inspection.

9Q11 (continued)

(7) Inclusion of image quality indicator on each film.

(8) Film storage in accordance with recommendations from the manufacturer and monitoring of date limitations.

b. There is objective evidence of observance to established procedures.

9Q12. Are the critical parameters of ultrasonic inspection identified and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Immersion/squirter/bubbler tanks.

(a) Tanks are free of foreign materials that may inhibit adequate inspection.

(b) Wetting agent and/or corrosion inhibitor are used where needed.

(2) Couplant materials that are not detrimental to part being inspected or subsequent manufacturing operations.

b. There is objective evidence of observance to established procedures.

9Q13. Are the critical parameters of the magnetic particle process identified and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

9Q13 (continued)

Statement of Condition

a. Procedures provide for:

(1) Evaluation of the viscosity of the system oil on a systematic and periodic basis.

(2) Evaluation of the suspension of magnetic particles on a systematic and periodic basis.

(3) Evaluation of system sensitivity using a serialized test item on a systematic and periodic basis.

b. There is objective evidence of observance to established procedures.

9Q14. Are the critical parameters of the fluorescent penetrant process identified and controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Checking developers periodically in accordance with applicable specifications.

(2) Checking and recording rinse water temperature and pressure daily (where applicable).

(3) Checking emulsifiers periodically in accordance with manufacturer's recommendations, or applicable specifications.

(4) Contamination testing, with results within the prescribed maximum allowable limits. This test is checked on a systematic and periodic basis.

b. There is objective evidence of observance to established procedures.

9Q15. Are the critical parameters of the eddy current process identified and controlled?

9Q15 (continued)

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Appropriate test pieces, eddy current probes, and handling equipment.

(2) Test pieces used to adjust the sensitivity of the electronic apparatus that are free of interfering discontinuities and that contain discontinuities similar in size and composition to those expected in the products to be examined.

(3) Test pieces that provide good signal resolution and have one or more natural or artificial discontinuities, such as notches or holes.

(4) Test areas visually free of grease, oil, rust, scale, or other substances that could interfere with the inspection.

b. There is objective evidence of observance to established procedures.

SECTION 10. SUPPLIER CONTROL

1. **SYSTEM ELEMENT DESCRIPTION**. The system by which the evaluated facility ensures supplier materials, parts, and services conform to FAA-approved design. For the purpose of this section, the term "supplier" includes distributors.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

10E1. Does the evaluated facility control supplier design, including changes?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for control over supplier design and changes thereto.

b. There is objective evidence of observance to established procedures.

10Q1. Are initial and periodic evaluations of suppliers made, as necessary, and corrective actions taken to correct deficiencies found in the system?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Initial evaluation of suppliers, and periodically as necessary, to determine their capability to meet requirements.

10Q1 (continued)

(2) The methods for determining the extent of the evaluations, dependent, as a minimum, on the type, complexity, method of control, and importance of products or services procured, and provide for on-site evaluation, process reviews, document reviews, or independent product evaluations.

(3) Implementing and documenting effective corrective action when deficiencies are found.

b. There is objective evidence of observance to established procedures.

10Q2. Is use of approved suppliers required?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Criteria for supplier acceptability, based as a minimum on evaluation results and quality performance history for the commodities or services provided.

(2) Collection, evaluation, and reporting of quality performance data.

(3) A list of suppliers who have been reviewed and evaluated and found to be acceptable.

(4) A list of new suppliers located in other countries.

(5) Use of acceptable suppliers only.

(6) Methods for procurement from suppliers that require special control.

(7) Furnishing a current list to suppliers of the subtier sources evaluated by the evaluated facility.

b. There is objective evidence of observance to established procedures.

10Q3. Is the quality manual (or top level document) of a supplier approved by the evaluated facility?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide the method for reviewing and approving a supplier's quality system data.

b. There is objective evidence of observance to established procedures.

10Q4. Is buyer-furnished material controlled?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21. 165		§ 21.605
P				
N			X	

Statement of Condition

a. There is objective evidence that material furnished by the buyer is accepted under controlled conditions and meets FAA-approved design.

10Q5. Does the evaluated facility flow down applicable technical and quality requirements to both U.S. and other country suppliers?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

10Q5 (continued)

Statement of Condition

a. Procedures provide for:

(1) Inclusion of applicable technical data and quality requirements in the purchase documents. Technical data and requirements include, as applicable:

(a) Special processing specifications/engineering requirements for suppliers performing special processing.

(b) Calibration traceable to a national standard and submittal of certificates for suppliers performing calibration services.

(c) Software specification requirements for suppliers providing software.

(d) Submittal of certification test reports for all shipments of raw material.

(e) Identification of raw and process material in accordance with industry and/or customer specifications.

(f) Appropriate identification and marking of products/parts thereof.

(g) Identification of the actual manufacturers of the supplies provided by warehouses and distributors.

(h) Delegation of authority for major inspections or material review. Material review requirements include, as a minimum:

1 Identification of relevant MRB procedures that define the scope and authority of the supplier MRB.

2 Maintenance of an MRB system that meets all FAA requirements placed on the evaluated facility's MRB system (e.g., documentation of nonconformances, maintenance of records, members of the MRB, mutilation of “scrap” material).

3 Process for submittal to the evaluated facility of supplier nonconformances that are considered major changes to the FAA-approved type design.

(i) Authorization and requirements for direct shipment, when applicable.

(j) Supplier shipping document requirements for direct shipment:

10Q5 (continued)

1 Declaration that parts were produced under the terms of the production approval.

2 Identification of the product on which the part is eligible for installation.

(k) Special packaging and preservation requirements, when warranted for material protection.

(l) Identification of appropriate technical requirement revision levels.

(m) Notice of FAA review of supplier's facilities and products as necessary.

(n) Incorporation of design changes as specified.

(o) Notification to the evaluated facility of any latent defects, or defects listed in § 21.3, in products or parts previously supplied.

(p) Formalized SQC policy, when required.

(q) Requests for copies of control charts and other pertinent statistical data applicable to the time period during which the supplied products/parts thereof were produced.

(r) Submittal of supplier designs and changes to the evaluated facility for approval prior to incorporation, when required.

(s) Submittal of changes to a supplier's quality system that may affect inspection, conformity, or the airworthiness of the product.

(t) Record retention requirements.

(u) Use of English language for quality data (e.g., supplier quality procedures, certificates, reports, or other similar data required by the evaluated facility).

(2) A method to control the issuance and distribution of technical data and quality requirements to suppliers. Control methods include, as a minimum:

(a) Control and documentation of revisions to technical data and quality requirements (including sub-tier and referenced documents).

(b) Control of obsolete technical data and quality requirements.

(c) Determination of receipt status by the supplier.

b. There is objective evidence of observance to established procedures.

10Q6. Does the quality organization review purchase documents prior to issuance?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition:

a. Procedures provide for review of purchase documents by the quality organization prior to issue to ensure that all pertinent requirements have been incorporated.

b. There is objective evidence of observance to established procedures.

10Q7. Does the evaluated facility act on supplier notifications of suspected problems with previously delivered products?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for methods used to act upon notifications of nonconforming products, ensuring proper investigation and corrective action is taken.

b. There is objective evidence of observance to established procedures.

10Q8. Is raw material, including process material (such as weld rod, etc.), verified and identified?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.143	§ 21.303	§ 21.607
P				
N				

10Q8 (continued)

Statement of Condition

a. There is objective evidence that all raw material has been verified and identified. {§§ 21.125, 21.143, 21.303, 21.607}

(1) Examples of methods of verification include:

(2) Review of certification test reports to ensure all requirements are met.

(3) Types and frequencies of analysis required to verify certifications, consisting as a minimum of initial and periodic verifications, dependent on supplier evaluations, past quality performance, and material importance.

(4) Nondestructive inspection techniques employed to verify the quality of castings and forgings.

b. Examples of methods of identification include:

(1) When specified, Material Laboratory Analysis Records identifiable to batch number, serial number, or heat number for a given part number.

(2) If Material Certificate/Laboratory Analysis is for a quantity of material, then serial numbers, if appropriate, are identifiable to the respective Material Certificate or Laboratory Analysis.

10Q9. Are purchased shelf-life materials and products verified to ensure that specification requirements are met?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Verification upon receipt of purchased material or products that have shelf-life requirements to ensure they are within specified dates.

10Q9 (continued)

(2) Withholding from production purchased material or products not within the specified shelf life requirements unless special testing is accomplished to verify conformity.

b. There is objective evidence of observance to established procedures.

10Q10. Is receiving inspection required to verify that supplier-furnished parts/service conform to the FAA-approved design data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Conformity of supplier furnished raw material, items, software, parts, and assemblies.

(2) Extent of actual inspection upon receipt, depending as a minimum upon inspectability for conformity and quality, supplier evaluation results, past quality performance, inspections and reviews conducted at the supplier's facility, and relative importance of the supplies.

(3) First article inspection and test of products produced by new suppliers.

(4) Inspection and documentation requirements.

(5) Evaluation of incoming statistical data.

b. There is objective evidence of observance to established procedures.

10Q11. Are material and parts awaiting certification segregated?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for control, identification, and segregation (where practical) of material and parts awaiting testing or inspection from those already approved.

b. There is objective evidence of observance to established procedures.

10Q12. Are records of receiving inspection generated and maintained?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Contents of each record used, including, as a minimum, for the material or product inspected, name, part number, sample size, type and number of inspections made, conformance or nonconformance, number and description of nonconformances found, and action taken.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

b. There is objective evidence of observance to established procedures.

10C1. Does the evaluated facility make information available to the FAA regarding all delegation of authority to suppliers to make major inspection of any products/parts thereof?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.143		§ 21.605
P				
N	X		X	

Statement of Condition

a. There is objective evidence that all delegations of authority to suppliers for major inspections of any products/parts are available for review by the FAA. {§ 21.143; § 21.605}

10C2. Does the evaluated facility notify the FAA of all new suppliers located in other countries, and of the receipt of first articles produced by those suppliers?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for notification to the FAA of all new suppliers located in other countries, and of the receipt of first articles produced by those suppliers.

b. There is objective evidence of observance to established procedures.

10C3. Does the evaluated facility notify the FAA of suppliers in other countries authorized to direct ship?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

10C3 (continued)

Statement of Condition

a. Procedures provide for notification to the cognizant FAA office of each supplier located in another country authorized to direct ship.

b. There is objective evidence of observance to established procedures.

SECTION 11. NONCONFORMING MATERIAL

1. **SYSTEM ELEMENT DESCRIPTION**. A method of controlling, evaluating, and dispositioning of any product/part thereof which does not conform to FAA-approved design.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

11M1. Does upper management review and analyze nonconforming material data to detect adverse trends and determine appropriate levels of corrective and preventive actions required?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Types of nonconforming material data referred for upper management review, personnel involved in reviewing and analyzing the data, and frequency of reviews.

(2) Appropriate investigation by all relevant facility organizations to reduce, prevent, and correct adverse trends.

b. There is objective evidence of observance to established procedures.

11E1. Are engineering personnel reviewing nonconforming material to identify major or minor changes to the FAA-approved type design?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

11E1 (continued)

a. Procedures provide for engineering review of nonconforming material to determine if the documented nonconformance constitutes a major or minor change to the FAA-approved type design.

b. There is objective evidence of observance to established procedures.

11Q1. Are nonconforming products/parts identified, controlled, and dispositioned?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.143	§ 21.303	§ 21.605
P				
N				

Statement of Condition

a. There is objective evidence that nonconforming products/parts have been identified, controlled, and dispositioned . {§§ 21.125, 21.143; 21.303; 21.605} Control includes segregation of nonconforming material, usually through storage in enclosed and secure holding areas, with access limited to authorized personnel. Standard repair procedures should also be controlled.

11Q2. Is material that has been dispositioned as scrap required to be permanently identified as such, and disposed of?

Applicability:

	APIS	PC	PMA	TSO
R	§21.125	§21.165	§21.303(k)	§21.605
P				
N				

Statement of Condition

a. There is objective evidence that:

(1) Nonconforming material that has been dispositioned as “scrap” has been identified and disposed of. Parts/products dispositioned as “scrap” are mutilated or otherwise identified prior to release from material review control to preclude inadvertent use.

11Q2 (continued)

(2) Parts/products dispositioned as "scrap" that are retained in lieu of mutilation and disposal are properly identified and/or physically segregated to preclude inadvertent use; e.g., parts placed in a "scrap retention" crib awaiting a possible repair to be developed, or used in mock-ups or experimental testing.

(3) Parts from assemblies dispositioned as "scrap" are recovered and used only if the material review disposition shows that those parts did not contain the nonconformances that led to the "scrap" disposition.

11Q3. Is a Material Review Board (MRB) established and operational?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.143		§ 21.605
P			X	
N				

Statement of Condition

a. There is objective evidence that:

(1) MRB members have been identified. This includes, as a minimum:

(a) Identification of the required members of the MRB, which should include, as a minimum, representatives of both the quality and engineering departments. {§ 21.125}

(b) Required qualifications of the quality and engineering members of the MRB, and the means by which personnel are added to the MRB.

(c) A list or electronic equivalent of approved quality and engineering representative members of the MRB, the frequency that MRB member lists are updated, the areas where these lists are available, and a facsimile of MRB member signatures or identification stamps.

(d) Approval by MRB representatives of both the quality and engineering departments of MRB documents which disposition nonconforming parts "accept-as-is" and "repair."

(2) The MRB has not exceeded its scope and limits of authority. This includes, as a minimum:

(a) Disposition of nonconformances which are minor changes to FAA-approved type design as "accept-as-is," "rework," "repair," "scrap," or "return-to-supplier."

11Q3 (continued)

(b) Disposition of nonconformances which are major changes to the FAA-approved type design as "rework" (to eliminate the nonconformance), "repair," "scrap," or "return-to-supplier." The MRB may disposition these nonconformances "accept-as-is" only after the major change has been approved by the FAA as a change to the FAA-approved type design. {§ 21.93}

(3) Nonconforming material is controlled from presentation to the MRB through final MRB disposition. MRB control may be accomplished through segregation (physical or electronic), marking, or tagging, etc., in a manner to preclude inadvertent release, or release by non-MRB personnel {§ 21.125}. This includes, as a minimum:

(a) Completion of all necessary MRB documents, including all required signatures of MRB personnel, prior to physical release of products/parts from MRB control.

(b) Identification of MRB material sent to manufacturing areas for rework or repair to preclude subsequent release without MRB approval. {§ 21.125}

(c) Identification of MRB material sent to manufacturing areas for continued processing and reinspection of the nonconformance after subsequent operations to ensure reinspection of the specified characteristic. {§ 21.125}

(4) MRB decisions have been recorded. {§ 21.143; § 21.605}.

(5) Nonconforming material disposition authority has been delegated to preliminary review personnel for "scrap," "return-to-supplier," "rework," or "repair" to Standard Repair Procedures.

11Q4. Are material review records generated and maintained?

Applicability:

	APIS	PC	PMA	TSO
R	§21.125	§21.165		§21.607
P			X	
N				

Statement of Condition

a. There is objective evidence that:

(1) Material review records, include, as a minimum, part number, quantity, date, adequate description of nonconformances (including identification as major or minor change), disposition, and authorized approval.

11Q4 (continued)

b. Application of “electronic” signatures are controlled, as well as authorized access to electronic data for making changes (e.g., password protection).

c. Records are legible, complete, and accurate.

11Q5. Is adequate reinspection/retest required following rework/repair?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125			
P		X	X	X
N				

Statement of Condition

a. There is objective evidence that:

(1) Materials and parts dispositioned as "rework" by the MRB, or by persons assigned preliminary review authority, are reinspected, or retested as necessary, to ensure the rework was completed and that the former nonconformance now meets the FAA-approved type design. {§ 21.125}

(2) Materials and parts dispositioned as "repair" by the MRB are reinspected, or retested as necessary, to ensure the repair was completed and that the nonconformance meets the acceptance criteria of the MRB. {§ 21.125}

11Q6. Is corrective action (in-plant, at suppliers, and in-service) required where processes or procedures result in a nonconforming product/part thereof?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

11Q6 (continued)

(1) Analyses to determine the root cause of nonconformances.

(2) Periodic reviews of material review records to identify repetitive nonconformances. There are guidelines for initiating investigation and corrective action for repeated nonconformances that have exceeded an established limit of occurrences.

(3) Corrective action on repetitive nonconformances dispositioned "accept-as-is" to preclude de facto changes to the type design being made through MRB acceptance of those nonconformances, rather than through the FAA-approved change system.

(4) Evaluation of the design if a product/part thereof continually fails to meet the requirements of the engineering drawing.

(5) Control of any deviation system established to allow the production of products/parts thereof to increased tolerances and/or relaxed standards until the completion of corrective action. Some deviations are FAA-approved minor drawing changes to the type design.

b. There is objective evidence of observance to established procedures.

11Q7. Are corrective actions monitored for response, implementation, and effectiveness?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Review of material review records (including corrective action statements) for repetitive nonconformances to monitor response, implementation, and effectiveness of corrective action.

(2) Responsibilities of any Corrective Action Board (CAB) or equivalent function established, including tracking of significant corrective action.

b. There is objective evidence of observance to established procedures.

11S1. Are nonconformances which affect products in service reported to users?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide the method to notify users and recall products, when necessary, when nonconformances are suspected or known to exist in products in service.

b. There is objective evidence of observance to established procedures.

11C1. Are nonconformance dispositions that are identified as major changes approved only by the FAA through the type design process?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.97	§ 21.97	§ 21.97	
P				
N				X

Statement of Condition

a. There is objective evidence that all nonconformance dispositions that are considered major changes to the type design are submitted to the FAA for approval. {§ 21.97}

SECTION 12. MATERIAL HANDLING/STORAGE

1. **SYSTEM ELEMENT DESCRIPTION**. The methods used to protect raw materials, parts, subassemblies, assemblies, and completed products during manufacture, inspection, test, storage, and preparation for shipment to prevent damage, deterioration, or contamination.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

12E1. Are changes to drawings, specifications, etc., made to incorporate appropriate methods of protecting products when recurrent damage is reported?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for design engineering review of recurrent product damage linked to approved protection methods to ensure appropriate methods are put in place.

b. There is objective evidence of observance to established procedures.

12P1. Does the manufacturing organization participate in the review of material handling specifications, procedures, etc.?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

12P1 (continued)

Statement of Condition

a. Procedures provide for the manufacturing organization to review specifications, procedures, etc., prior to release to ensure that the product can be effectively protected and retain conformity to FAA-approved design during production.

b. There is objective evidence of observance to established procedures.

12Q1. Are appropriate methods used to prevent part damage or contamination?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21. 125		§ 21.303	
P		X		X
N				

Statement of Condition

a. There is objective evidence of:

(1) Instructional guidance on the use of material handling equipment.

(2) Methods for stacking parts.

(3) Methods for tieing, wrapping, or properly supporting parts to preclude shifting and falling.

(4) Methods to protect critical machined surfaces, highly polished surfaces, or plated parts. Methods include use of lift fixtures, covering on fork lift contact surfaces, protective containers, wrapping, interlayering with protective material, special racks.

(5) Methods to protect electronic parts from corrosion, pin damage, or contamination from dust or dirt. Sealed type parts (e.g., switches, circuit breakers, or relays) are protected from rough handling and contact damage from like parts or other products.

(6) Methods to protect product from contamination. Methods include:

(a) Capping all tubing prone to entrapment of foreign objects at both ends.

12Q1 (continued)

NOTE: Tubes that will receive further processing (e.g., fittings, welding, or chemical treatment), and that will be cleaned in a subsequent process, need not be protected until all operations are completed.

(b) Bagging, plugging, or capping completed hose and hose assemblies.

(c) Individually packaging or properly protecting oxygen equipment, plumbing, and fittings. Methods also include cleaning instructions and subsequent protection for contaminated items.

(d) Bagging or capping of sensing devices (e.g., instruments, pressure and vacuum transducers, cabin pressurization equipment, gyros, switches, or air data computers), and pressure venting when required.

(7) Special handling provisions (e.g., white gloves or electrostatic discharge (ESD) control), where warranted. These provisions include:

(a) Protective measures to prevent fingerprints (particularly the by-products of oil, moisture, and salt) from deteriorating the product or causing inadequate adhesion.

(b) Protecting grease-coated products (e.g., control cables, bearings, gears, and rod ends) from dust, dirt, and corrosion.

(c) Training in special handling and storage techniques.

(d) Proper handling of ESD sensitive supplies and parts, including the methods for clearly identifying supplies and parts that require special ESD handling.

(e) Controlled work station conditions for removing ESD parts from special tote trays, boxes, and packaging.

(8) Methods to protect products during transit. Methods include:

(a) Bagging, boxing, or tieing parts and material to prevent intermixing.

(b) Retaining product in original containers as long as possible or practical.

(c) Foam, pads, or special packaging for delicate parts that are susceptible to vibration and shock damage.

(d) Covering, tieing, or banding parts and material that may be blown out of carts, trucks, or dollies.

12Q1 (continued)

(e) Protecting parts and materials from adverse weather conditions that would affect the product.

12Q2. Are special environmental controls (temperature, cleanness, etc.) utilized when warranted?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125		§ 21.303	
P		X		X
N				

Statement of Condition

a. There is objective evidence that:

(1) Environmentally sensitive material is stored in original containers or, if removed for inspection, is appropriately resealed.

(2) Stock areas are surveyed to ensure compliance to written procedures for environmentally sensitive materials.

(3) Upper and lower temperature and humidity control limits, when applicable, recording requirements, and corrective action procedures have been established, and that corrective action is taken as required when limits are exceeded.

(4) General housekeeping is controlled to ensure the product is not adversely affected by storage and handling (e.g., dirt, dust, water damage, corrosion, compression, dropping, ultraviolet light, heat, or cold).

(5) Stock room personnel have been trained in maintaining established environmental controls.

12Q3. Are only conforming and properly identified products/parts placed in storage?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

12Q3 (continued)

Statement of Condition

a. Procedures provide for:

(1) Placement in stock of products/parts thereof that have met established acceptance criteria. This includes parts that have been previously installed and removed, but not nonconforming material.

(2) Control of uncompleted parts to prevent stocking under an identifying part number until complete as defined by print or specification.

(3) Placement in stocking areas of parts and material under investigation for suspected nonconformances only if the issuance has been suspended, and parts or material are properly identified to preclude distribution and usage.

b. There is objective evidence of observance to established procedures.

12Q4. Is there proper segregation and protection of product/parts thereof in storage areas?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125		§ 21.303	
P		X		X
N				

Statement of Condition

a. There is objective evidence that:

(1) Parts and materials in storage areas are segregated from like or similar parts and material types.

(2) Bins, shelves, and storage areas are identified as to contents.

(3) Parts and materials in storage areas are protected from water, dust, and dirt damage.

12Q5. Are products/parts/material subject to age control, deterioration, or corrosion from prolonged storage identified and controlled?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125		§ 21.303	
P		X		X
N				

Statement of Condition

a. There is objective evidence that:

(1) Age-sensitive materials, and materials susceptible to corrosion, are identified and controlled. This includes, as a minimum:

(a) Determination of shelf life limits by type of material.

(b) Detailed mixing instructions if different from manufacturer's.

(c) Instructions for retest and extension of shelf life.

(d) Permissible amount of time shelf life may be extended.

(e) Identification requirements for shelf life extension dates.

(2) Bins containing limited shelf life items are identified.

(3) Out-of-date items in bonded areas are removed and segregated until reinspection, retesting, and dispositioning can be accomplished.

(4) Raw materials used in composites (e.g., pre-preg rolls and epoxy/adhesive materials) are in compliance with manufacturer's specifications. There is an evaluation trail concerning receipt of material, initial testing usage, retesting, etc.

12Q6. When appropriate, are design changes incorporated on products/parts in storage prior to their release for installation/shipment?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.125	§ 21.165	§ 21.303(k)	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence that design changes are incorporated into a product/part in storage before installation or shipment. This evidence may include one or more of the following:

(1) Establishment of effectivity of a design change.

(2) Use of shop order or traveler.

(3) Stock purge requirements.

(4) Rework to Engineering instructions.

(5) Inspection requirements.

(6) Reidentification and restocking requirements.

12Q7. Is removal or issuance of products from storage areas controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Authorized methods for removal or replacement of parts.

12Q7 (continued)

(2) Limited and controlled access to storage areas.

(3) Records to be generated and maintained for parts removed from the stock system.

(4) Issue of raw and process material accountable to a released production order.

(5) Control of parts that have been quarantined as a result of a suspected nonconformance.

b. There is objective evidence of observance to established procedures.

12Q8. Are only conforming and properly identified products/parts under the production approval or direct ship authority prepared for packaging and shipping?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Packaging and shipping products/parts that have been manufactured under the production approval, or authorized for direct shipment, and that meet established acceptance criteria.

(2) Compliance with shipping instructions.

(3) Methods for preservation, packaging, and shipping of completed products.

b. There is objective evidence of observance to established procedures.

SECTION 13. AIRWORTHINESS DETERMINATION

1. **SYSTEM ELEMENT DESCRIPTION**. The function which provides for evaluation of completed products/parts thereof, and related documentation, to determine conformity to FAA-approved design and condition for safe operation.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

13E1. Are Airworthiness Directives (AD) incorporated?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.123	§ 21.165	§ 21.303(k)	§ 21.607
P				
N				

Statement of Condition

a. There is objective evidence that applicable AD's have been incorporated. This evidence may include one or more of the following:

(1) Identification of applicable AD's.

(2) Tracking the status of AD incorporation.

(3) Furnishing the customer with the AD incorporation status at the time the product is delivered.

13P1. Are completed aircraft properly registered?

Applicability:

	APIS	PC	PMA	TSO
R	Part 47	Part 47		
P				
N			X	X

13P1 (continued)

Statement of Condition

a. There is objective evidence that completed aircraft are properly registered. {Part 47}

13P2. Are flight manuals, supplements, and current weight and balance data furnished with each aircraft?

Applicability:

	APIS	PC	PMA	TSO
R	§ 23.1581 § 25.1581 § 27.1581 § 29.1581	§ 23.1581 § 25.1581 § 27.1581 § 29.1581		
P				
N			X	X

Statement of Condition

a. There is objective evidence that aircraft flight manuals, supplements, and current weight and balance data are furnished with each aircraft.

13Q1. Are aircraft, engine, and/or propeller log books and/or records, which have inspections and operating time requirements, properly annotated, signed, and dated?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X		
N			X	X

Statement of Condition

a. Procedures provide for:

(1) Aircraft log book entry and recording requirements.

(2) Record legibility, completeness, and accuracy.

13Q1 (continued)

(3) Methods for updating log books.

(4) Monitoring and verification of log book entries.

b. There is objective evidence of observance to established procedures.

13Q2. Have applicable airworthiness certificates or special flight permits been obtained for the purposes for which the aircraft is flown?

Applicability:

	APIS	PC	PMA	TSO
R	Part 21 Subparts H, I	Part 21 Subparts H, I		
P				
N			X	X

Statement of Condition

a. There is objective evidence that proper airworthiness certificates or special flight permits have been obtained prior to using aircraft for their intended purposes. {Part 21 Subparts H and I}

13C1. Have Statements of Conformity been submitted to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.130			
P				
N		X	X	X

Statement of Condition

a. There is objective evidence that a statement of conformity for the product manufactured by an APIS holder has been submitted to the FAA, and that this statement has been signed by an authorized person who holds a responsible position in the manufacturing organization. {§ 21.130}

13C2. Have applications for airworthiness certification been submitted to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	Part 21 Subparts H, I			
P				
N		X	X	X

Statement of Condition

a. There is objective evidence that applications for airworthiness certificates have been submitted to the FAA.

13C3. Have registration and airworthiness certificates been cancelled for aircraft whose title has passed to an importing country purchaser?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.335	§ 21.335		
P				
N			X	X

Statement of Condition

a. There is objective evidence that U.S. registration and airworthiness certificates have been cancelled by the FAA when title passes or has passed to an importing country purchaser. This evidence includes the return of Registration and Airworthiness Certificates, AC Form 8050.3 and FAA Form 8100-2, to the FAA. {§ 21.335}

SECTION 14. FAA REPORTING REQUIREMENTS

1. **SYSTEM ELEMENT DESCRIPTION**. The procedures and methods used to notify the FAA of specific conditions as required by the applicable CFR. This includes procedures for positive feedback, recording, reporting, and investigation of significant or reported failures, malfunctions, or defects. This function would also provide for determining cause and effecting appropriate corrective actions on such failures, malfunctions, or defects.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

14S1. Are there provisions for receiving feedback on service problems from users/installers of the product/part thereof?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Identification of a specific function to receive reports of service difficulties.

(2) Determination of appropriate manufacturing or design responsibilities for the reported problem.

(3) A system of tracking for accountability.

b. There is objective evidence of observance to established procedures.

14S2. Is a record of reported service difficulties generated and maintained?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

14S2 (continued)

Statement of Condition

a. Procedures provide for:

(1) Contents of each record used, including when the report was received, what was reported, and actions taken.

(2) Record legibility, completeness, and accuracy.

(3) Requirements that tape files, microfilm, etc., used for record retention exhibit legible data, acceptance stamps and/or signatures, as required.

b. There is objective evidence of observance to established procedures.

14S3. Are service problems (both design and manufacturing) investigated and prompt corrective actions taken by the evaluated facility?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) A method of investigating, identifying, locating and reporting suspected unsafe products.

(2) Prompt corrective action, which includes, as a minimum:

(a) Root cause determination and correction of deficient design or manufacturing.

(b) A means of reporting, purging, tracking, and accountability of known unsafe products.

b. There is objective evidence of observance to established procedures.

14S4. Is there a means for keeping users of the product/part thereof informed of service information, including field purges?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for informing product users of service difficulties, and of required field purges for suspected or known unsafe conditions.

b. There is objective evidence of observance to established procedures.

14S5. Are service bulletins and maintenance manuals approved by authorized personnel?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures define specific organizational and individual responsibilities for issuing service bulletins, maintenance manuals, service difficulty reports, and other related communication.

b. There is objective evidence of observance to established procedures.

14C1. Are failures, malfunctions, and defects reported to the FAA?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.3	§ 21.3	§ 21.3	§ 21.3
P				
N				

14C1 (continued)

Statement of Condition

a. There is objective evidence that failures, malfunctions, and defects identified as reportable conditions in § 21.3 are reported to the FAA by the most expeditious method available within 24 hours of occurrence, with provisions for weekends and holidays.

14C2. Are there requirements for the investigation of unairworthy conditions or unsafe features or characteristics reported by the FAA?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Investigating reports of unairworthy conditions or unsafe features or characteristics reported by the FAA.

(2) Reporting investigation results and actions taken or proposed to the FAA.

14C3. Is quality system data, and changes thereto, submitted to the FAA for approval?

Applicability:

	APIS	PC	PMA	TSO
R		§ 21.147		
P				
N	X		X	X

Statement of Condition

a. There is objective evidence that quality system data changes at a PC holder that may affect inspection, conformity, or airworthiness of the product are promptly submitted in writing to the FAA for approval. {§ 21.147} Implementation of the changes should be withheld until verbal or written FAA approval, as appropriate, is received.

14C4. Are relocations of the manufacturing facility at which products are manufactured, or expansions to include additional facilities at other locations, reported to the FAA in writing within 10 days of the action?

Applicability:

	APIS	PC	PMA	TSO
R			§ 21.303(j)	
P				
N	X	X		X

Statement of Condition

a. There is objective evidence that any changes in the location(s) where PMA products are manufactured have been promptly reported to the FAA. {§ 21.303(j)}

14C5. Are service bulletins, maintenance manuals, and changes thereto, coordinated with FAA engineering?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for coordination of service bulletin and maintenance manual issuances, and changes thereto, with FAA engineering.

b. There is objective evidence of observance to established procedures.

SECTION 15. INTERNAL AUDIT

1. **SYSTEM ELEMENT DESCRIPTION**. A scheduled and systematic evaluation by the evaluated facility to ascertain its own abilities and procedural compliance to established policy and guidance.

> **NOTE: The establishment and operation of an internal audit program (or sometimes referred to as a self-audit program) is not a mandatory requirement placed upon a PAH, but is commonly observed as an established industry practice. If a facility has a documented and operational internal audit program, it should be reviewed during the ACSEP evaluation for adequacy and observance with the facility's established procedures.**

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

15M1. Does the evaluated facility have an internal auditing program to verify compliance with established policies or approved data?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Planned and documented internal audits of personnel, procedures, operations, equipment, material, processes performed, and records in all major functional areas.

(2) Conducting, accomplishing, and reporting the audits.

(3) Compliance, systems, and product audits.

(4) An audit schedule which is available and followed.

(5) Special audits when critical safety problems are detected, or when there are significant organizational changes.

15M1 (continued)

(6) Methods for identifying nonconformances, obtaining required corrective action.

(7) Identification of responsible personnel.

b. There is objective evidence of observance to established procedures.

15M2. Is there feedback to higher-level management concerning the results of internal audits?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Review of internal audit results and corrective actions by management.

(2) Review of internal audit results by personnel having responsibility for the area that was audited.

(3) Quality systems or overall quality program improvement, in addition to correcting reported noncompliances.

b. There is objective evidence of observance to established procedures.

SECTION 16. GLOBAL PRODUCTION

1. **SYSTEM ELEMENT DESCRIPTION**. With the onset of profit and risk-sharing ventures by many FAA approval holders, global marketing and procurement strategies, multinational and multicorporate activities, etc., there has been a significant increase in the global expansion of the world's aircraft manufacturing community. Global production includes the use of associate facilities, the issuance and acceptance of import/export airworthiness approvals, and adherence to all applicable Bilateral Airworthiness Agreement (BAA) requirements

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

16Q1. Has an interface quality document been prepared for international manufacturing activities?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for a quality document that establishes the interface between the quality requirements of the international manufacturing activity and the evaluated facility's quality manual or procedures.

b. There is objective evidence of observance to established procedures.

16Q2. Is product/parts thereof from associate facilities controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P		X	X	X
N	X			

16Q2 (continued)

Statement of Condition

a. Procedures provide for:

(1) Control of product/parts thereof from associate facilities.

(2) Collection of quality performance data.

b. There is objective evidence of observance to established procedures.

16Q3. Have export airworthiness approvals been obtained for all products exported?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for:

(1) Methods for applying for export airworthiness approvals, and the responsibilities of personnel authorized to submit applications.

(2) A list of the products for which export airworthiness approvals are obtained.

(3) All exported products to meet special requirements of the importing country listed in Appendix 2 of AC 21-2 (current revision). Procedures provide for properly annotating any deviation on the exporting documentation, and including a letter of acceptance from the importing country for such deviations.

(4) Retention of copies of FAA Form 8130-4, Export Certificate of Airworthiness, and/or FAA Form 8130-3, Airworthiness Approval Tags, as applicable.

b. There is objective evidence of observance to established procedures.

16Q4. Have airworthiness approval tags (FAA Form 8130-3) been issued by authorized personnel?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. Procedures provide for identification of personnel authorized to issue airworthiness approval tags. {Part 21 Subpart L}

b. There is objective evidence of observance to established procedures.

16Q5. If an export airworthiness approval has been issued, have the necessary documents and instructions been forwarded to the aviation authority of the importing country, or to other locations as specified in the special requirements of importing countries in AC 21-2?

Applicability:

	APIS	PC	PMA	TSO
R	§ 21.335	§ 21.335	§ 21.335	§ 21.335
P				
N				

Statement of Condition

a. There is objective evidence that:

(1) All documents and information necessary for proper operation of the products being exported have been forwarded to the cognizant aviation authority. {§ 21.335}

(2) Manufacturing assembly instructions and an FAA-approved flight test checkoff form have been forwarded to the cognizant aviation authority for unassembled aircraft that is being exported. {§ 21.335}

SECTION 17. MANUFACTURER'S MAINTENANCE FACILITY

1. **SYSTEM ELEMENT DESCRIPTION**. The system by which a manufacturer of aircraft, aircraft engines, propellers, appliances, or parts thereof, maintains and approves for return to service any article for which it is rated, and performs preventive maintenance on that article.

2. **SYSTEM ELEMENT STANDARDIZED EVALUATION CRITERIA**. The following criteria are used to document evaluation of this system element.

17Q1. Has an inspection program and a program covering maintenance and preventive maintenance been established?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.2	§ 145.2	§ 145.2	§ 145.2
P				
N				

Statement of Condition

a. There is objective evidence of:

(1) Maintenance, return to service, and preventive maintenance on those products and appliances for which the MMF has been issued. {§ 145.2}

(2) Competent personnel, and adequate facilities and equipment. {§ 145.2}

(3) Aircraft released to service that is airworthy and that has been properly maintained. {§ 145.2}

17Q2. Is the evaluated facility operating within the privileges of its repair station certificate?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.103	§ 145.103	§ 145.103	§ 145.103
P				
N				

17Q2 (continued)

Statement of Condition

a. There is objective evidence that the work performed under the MMF is limited to the maintenance and return to service of products manufactured under the facility's production approval, and to preventive maintenance on those products. {§ 145.103}

17Q3. Is the work performed in accordance with Part 43 requirements, and approved data?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.105	§ 145.105	§ 145.105	§ 145.105
P				
N				

Statement of Condition

a. There is objective evidence that work is performed according to the manufacturer's maintenance procedures or Instructions for Continued Airworthiness. {§ 145.105; § 43.13}

17Q4. Are certificated mechanics or repairmen directly in charge of maintenance and preventive maintenance?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.103	§ 145.103	§ 145.103	§ 145.103
P				
N				

Statement of Condition

a. There is objective evidence that certificated mechanics and repairmen are directly in charge in all areas of the facility where maintenance or preventive maintenance is being performed. {§ 145.103}

17Q5. Is the work accomplished entered in the appropriate maintenance record?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.105 § 43.9 § 43.11	§ 145.105 § 43.9 § 43.11	§ 145.105 § 43.9 § 43.11	§ 145.105 § 43.9 § 43.11
P				
N				

Statement of Condition:

a. There is objective evidence that all maintenance and preventive maintenance is entered in the appropriate maintenance record, including the information listed in CFR part 43, § 43.9 and/or § 43.11.

17Q6. Have all requirements been completed prior to approving return to service?

Applicability:

	APIS	PC	PMA	TSO
R	§ 145.105 § 43.5	§ 145.105 § 43.5	§ 145.105 § 43.5	§ 145.105 § 43.5
P				
N				

Statement of Condition

a. There is objective evidence that all requirements have been satisfactorily completed, including AD incorporation, before approving for return to service any product or part thereof that has undergone maintenance or preventive maintenance. {§ 145.105; § 43.5}

17Q7. Is product/parts thereof from satellite MMFs controlled?

Applicability:

	APIS	PC	PMA	TSO
R				
P	X	X	X	X
N				

Statement of Condition

a. There is objective evidence that:

(1) Product/parts thereof from satellite MMFs are controlled.

(2) Quality performance data has been collected.